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MANUALS

OF

NATURAL HISTORY.

ORNITHOLOGY.

BRITISH BIRDS.

BRITISH ORNITHOLOGY.

MANUAL

OF

BRITISH BIRDS:

INCLUDING THE ESSENTIAL CHARACTERS OF THE ORDERS, FAMILIES, GENERA, AND SPECIES.

BY

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SECOND EDITION,

WITH AN APPENDIX OF RECENTLY OBSERVED SPECIES, AND INDICES OF LATIN AND ENGLISH NAMES.

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ADVERTISEMENT.

THIS Edition of the "Manual of British Birds" is the same as the first, with the addition of Descriptions of Eighteen Species, most of which have been recently added to our Fauna—an Index to the Latin Names of the Orders, Families, and Genera, and an Index to the English Names of the Orders, Families, Genera, and Species, including the common and provincial names of the latter. The former subsidiary title of "British Birds" has now been adopted as the general title, as more distinctly indicating that the work contains descriptions of all the Birds which have been met with in the British Islands.

Whatever may be the imperfections of this little work, it is gratifying to its author to know that it has been found useful in promoting a study calculated to afford much delight, with as little pain as we usually find accompanying the most harmless of human pursuits.

W. MACGILLIVRAY.

Marischal College, Aberdeen,
May, 1846.

EXPLANATORY NOTE.

In this work, of which the plan differs materially from that of any other on the same subject, the essential characters of the Orders, Families, Genera, and Species, being adapted for actual use, are given sufficiently in detail to enable the student to refer an object to its proper place. The very brief distinctive phrases which some naturalists affect, in imitation of Linnæus, are practically useless.

The characters of the ORDERS are short, those only which are general being given. Those of the FAMILIES are somewhat more extended. It is to be understood that none of these characters are absolute, and that *all* the characters will not be found to agree *precisely* with *every* species of the Family or Order, although they refer to the greater number. The characters of the GENERA are more precise, yet not absolute. Those of the SPECIES, on the contrary, are strictly applicable only to the particular kind of bird referred to. These differences result simply from the fact that species only exist in nature, and that genera, families, orders, and all other groups, are merely ideal associations made for convenience, and therefore more or less arbitrary.

In the account which I give of each species will be found, first, a short comparative and distinctive description of the adult birds, or of the male and female separately, when they differ in colour or otherwise, and then of the young. This specific description is followed by some of the principal measurements of an adult male of ordinary size, namely—1, the length from the tip of the bill to the tip of the longest feathers in the tail; 2, the extent of a line drawn between the tips of the wings when stretched out; 3, the length of the wing from the wrist-joint, or flexure, to the tip of the longest primary quill; 4, the length of the bill measured along its upper outline, from the base to the tip, following its curve; 5, the length of the tarsus; 6, the length of the middle toe, or third toe, measured to the commencement of

the claw; 7, the length of the claw of that toe. Thus, with reference to the Golden Eagle, p. 40—

Male, length 33, extent of wings 72, wing from flexure 24, bill along the ridge $2\frac{8}{12}$, tarsus 4, middle toe $2\frac{5}{12}$, its claw $1\frac{1}{12}$.

Of the female there are given only the length from the tip of the bill to that of the tail, and the extent of the wings.

In the next paragraph are stated some of the more remarkable habits of the species, its distribution, a short description of its nest and eggs, and some other circumstances.

Then follow the vernacular names by which it is known.

And, lastly, reference is made to a few works in which the species is described, namely, the Systema Naturæ of Linnæus, the Manuel d'Ornithologie of M. Temminck, and the British Birds of Mr MacGillivray. On referring to these works, the student will find references to others.

A few words now as to Names. The Latin word Avis, which corresponds with the English word Bird, being feminine, the Ordinal names employed ought in strictness to be of the same gender. Accordingly, instead of naming the Rapacious Birds *Raptores*, as is usual, I call them Raptrices. The names of the Families being always adjective, must necessarily agree in gender with the substantive Avis, to which they refer: thus, Vulturinæ, Falconinæ, Corvinæ, Columbinæ. The generic names ought always to be of Greek or Latin origin. Names formed by giving a Latin termination to a modern word seem ludicrous, and therefore I have not in any case used them, although in a few instances I have adopted from authors such vernacular names as Sula and Gavia, which harmonize in sound with Latin words. Specific names are either adjective, as *regalis, pratensis, pileatus, cæruleus*, and agree in gender with the generic name to which they refer; or substantive, in which case they need not agree in gender, as *Corvus Monedula, Erithacus Rubecula*. When a species is named after a naturalist, it seems best to give the name unaltered, further than by Latinizing its terminal syllable: *Motacilla Yarrell-i, Motacilla Brisson-i, Sterna Macdougall-i*.

TO

M. J. C. TEMMINCK,

IN TESTIMONY

OF ADMIRATION OF HIS TALENTS

AS A NATURALIST,

AND OF GRATITUDE FOR BENEFIT

DERIVED FROM THE STUDY OF HIS WORK

ON THE BIRDS OF EUROPE.

WILLIAM MACGILLIVRAY.

ADVERTISEMENT.

No branch of Natural History has been more cultivated than Ornithology. The great beauty and liveliness of Birds, the diversity exhibited in their actions and mode of life, their wonderful migrations, the variety of modulated sounds which they emit, the facility with which many of them may be domesticated, the degree in which they are subservient to our wants, and various other considerations, render them objects of attraction to persons of every age and condition in society. At no former period has this study been more zealously and successfully prosecuted than at the present day. A mere list of the names of individuals who have written on the Birds of Great Britain would occupy considerable space; and when there are among them so many who have in various degrees contributed to the advancement of knowledge, it might seem unfair or presumptuous to point out those whose merits are most conspicuous.

But, as the most valuable works are too expensive to be available to students of every class, it has seemed to me that, to promote this favourite study, nothing is more wanted than a compendium of British Ornithology, a work sufficiently extended to contain descriptions full enough to enable the student to determine every species, and of so small a size as to be conveniently portable. Were

our three hundred and twenty species described in one volume of the size prescribed for the present series of Manuals, the characters would be too brief to be of much use. I have, therefore, devoted a volume to the Terrestrial and another to the Aquatic species, prefixing to the first a short Introduction to the Study of Ornithology, including all the particulars requisite to enable one not previously acquainted with the subject to compare the objects with their descriptive characters. Although, in a strictly scientific point of view, the division of birds into those of the land and water is not commendable, it is convenient, and in some degree natural and familiar.

The Classification of Birds is a subject of much dispute. In fact, no two authors follow precisely the same plan, or use the same nomenclature. In this state of uncertainty, I have had recourse to nature, and endeavoured to elicit a method which may be at least intelligible. In some instances I have altered the names, conceiving them to be erroneous, or inconsistent; but in every case, the popular, and some of the scientific, appellations are given. The generic characters, as well as those of the orders, include some particulars, especially with reference to the digestive organs, not given in other works, but easily intelligible, and of great importance as indicative of the mode of life of the species. Those who are desirous of obtaining more extended information on this subject, I refer to the only work known to me in which they will find it, my History of British Birds, of which three volumes, including all the species referred to in this Manual, have recently been published.

EDINBURGH, 25*th October* 1840.

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INTRODUCTION

Although densely peopled, traversed in all directions by crowded roads, and surrounded by ships transferring the produce of their manufactures to other countries, from which a corresponding influx takes place, the British Isles are peculiarly favourable to the feathered tribes. The protection afforded by the game laws prevents the destruction of many species which do not come under the care of the legislature, and the enforcement of the rights of property prevents much of the waste of animal life that would otherwise take place; while, on the other hand, the many secure breeding-places on the coast keep up a never-failing supply of such birds as seek their food in the seas. While the extent of land, and its vicinity to the Continent, render the number of terrestrial species equal to that observed in any other country situated in similar latitudes, the presence of the ocean, the diversified indentations of the shores, the numberless islets and rocks along the coast, and the abundance of lakes and streams, are the means of ensuring to us a greater variety of aquatic species than could exist in an inland country. The land and the water being with us equally favourable for the inhabitation of birds, the number of aquatic birds and waders together is almost exactly the same as that of the strictly terrestrial species, there being about an hundred and sixty of each kind, or three hundred and twenty in all.

The person who has a mind to devote his attention, conti-

nuously or at intervals, to the study of birds, needs be at no loss for opportunities. In almost any part of the country, about an hundred species may be procured without very much difficulty, and the habits of many of them may be satisfactorily studied. Specimens of an hundred and fifty more may be examined in our public museums, which, already numerous, are yearly increasing; and of the remainder one may form some idea from their representations in books. Prepared skins may be obtained in the principal towns; and in preserving the objects which he may procure, the student may obtain the assistance of some of the numerous individuals who devote themselves to the preparation of birds.

Stuffed and mounted skins are not those most useful to the ornithologist, they being too expensive, and requiring too much accommodation. A collection of prepared skins, partially stuffed, and arranged in the properly proportioned drawers of a cabinet, or series of cabinets, will be found much more useful, and much less expensive. But without possessing such a collection, or having free access to one, although the student may know birds by name, he will scarcely acquire a critical knowledge of their characters, their differences, and points of agreement.

Many persons, even professed naturalists, seem to think, that when one can distinguish a bird from every other, name it, assign it its place in an artificial or natural arrangement, and state some particulars of its habits and history, he knows all that is requisite. Such persons, having merely a dry technical sort of knowledge, have no idea of the pleasure to be derived from an intimate study of the structure and functions of birds. A month's study applied to half a dozen species, may afford more knowledge and more delight than the acquisition in the same period of merely the names and distinctive characters of fifty or more.

But few people can devote very much of their time to the study of birds, or of any other branch of natural history; and to those whose leisure is not great, even the names and

characters of objects are useful and interesting. To such persons a manual, like the present, containing a very condensed history of the species, is of importance, as it enables them readily to discover the name of any particular bird, and consequently to refer to any more extended work for further information, should they desire it. Persons having studied birds at intervals, as opportunities have occurred, and having thus acquired considerable, though disjointed, information, will also find it beneficial to refer frequently to a general systematic catalogue, including the essential characters of the species, genera, and families. Students or collectors, making excursions to distant places, and not finding it convenient to carry large treatises with them, will also be benefited by such a catalogue. In short, the uses of manuals like the present are numerous, and so obvious, that it is unnecessary to say more regarding them. Only, let the student not be satisfied with the little which they contain, but use them as a means of acquiring more knowledge, and of connecting and systematizing what he has already obtained.

In all sciences and arts, peculiar terms must be employed, and parts must be intelligibly defined. For the use of persons commencing the study, or not very proficient in it, I shall here present such explanations as will enable them to apply the characteristic phrases employed to the objects which they describe.

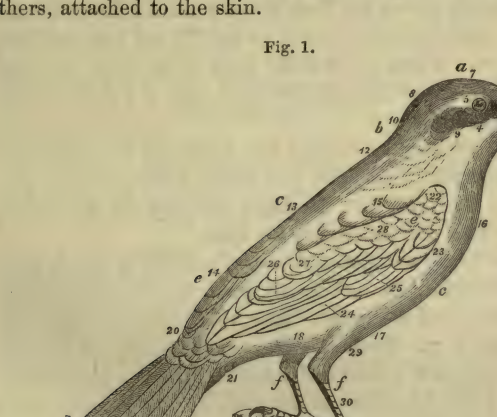
Birds are warm-blooded, oviparous, vertebrate animals. They have a brain, enclosed within a skull, a spinal marrow, protected by vertebræ, nerves issuing from these central parts, and distributed to all the organs. Their heart is double, one side of it receiving the blood from the veins, and sending it out by the pulmonary artery into the lungs, whence, on being subjected to the influence of the air, it returns by the pulmonary veins to the other side of the heart, which transmits it, by the aorta, to all parts of the body.

Their lungs are small, and incapable of much dilatation, but they communicate by apertures, with cells or membranous sacs situated in the chest, and among the muscles, and between them and the skin, and even with the cavities of the bones. Hence their respiration is said to be double. They have an internal skeleton, for the support and motion of the parts; are furnished with muscles, or organs subservient to motion; with three double organs of sense, namely, eyes, ears, and nasal cavities; with a tongue, which is partly an organ of taste, partly of prehension, and with a general sense of touch or feeling situated in the skin. Organs of assimilation, for the conversion of external substances into their own nature, and of propagation, for the continuance of their species, are also to be enumerated; together with other parts, which require to be somewhat particularly explained. For this purpose, let us take any bird, in which the external parts are easily distinguished, a Shrike, for example.

A bird may be divided into: the head, *a*; the neck, *b*; the body, *cc*; the tail, *d*; the anterior extremities or wings, *ee*; and the posterior extremities, or legs and feet, *ff*. The *Head* is composed of the brain, its membranes, the bones of the skull and face, the organs of seeing, hearing, smelling, and tasting, with those for the prehension and swallowing of food, and various other subordinate parts. The *Neck* is the more or less elongated and flexile part by which the head is joined to the body, and is composed of the cervical vertebræ, various muscles, the œsophagus or gullet, the windpipe, nerves, and bloodvessels. The *Body* is the basis of the whole, consisting of the dorsal and sacral vertebræ, the ribs, the breast-bone, the clavicles, the heart, bronchi, lungs, liver, stomach, intestines, kidneys, genital organs, and various other parts. The *Tail* is composed of the caudal or coccygeal vertebræ, their muscles, and the tail-quills. The *Anterior Extremity* consists of the bones of the scapula or

shoulder-blade, the humerus or arm, the cubitus or fore-arm, and the hand, with the muscles and quills. The *Posterior Extremity* consists of the femur or thigh, the tibia or leg, the tarsus, or what is commonly but erroneously called the leg, and the toes, with muscles and other parts. All these parts, excepting the bill or anterior part of the jaws, the eyes, the tarsi, and the toes, are generally covered with feathers, attached to the skin.

Fig. 1.



The *Bill* is composed of two mandibles, an upper, 1, and a lower, 2, formed of horny substances ensheathing the jaws. In the upper mandible are distinguished the base, the ridge, of which the outline is named the dorsal line, the sides, the edges or margins, and the point. In the lower mandible are seen the base, the two crura or branches, their junction or the angle, the ridge and its dorsal line, the edges, and the point.

About the head are seen further: the *nostrils*, 3, generally situated in a depression named the nasal sinus; the *angle* of the mouth, 4; the *lore*, or loral space, between the angle of the mouth and the eye; the *eye*, 5, in which are distinguished the pupil or dark central part, the iris or coloured circle surrounding the pupil, the upper and lower eyelids, the supra-ocular ridge, peculiar to the birds of prey. The anterior part of the head above is named the *forehead*, 6; the upper part, the *crown* or top, 7; the hind part, the *occiput*, 8. There are also the *sides* of the head, on which are distinguished the ear-coverts, 9, and the *face* or forepart in general.

The *Neck* may be divided into upper, middle, and lower parts, hind part, sides, and fore part. The upper hind part is named the *nape*, 10; the upper fore part the *throat*, 11, its uppermost part sometimes the *chin*.

In the *Body* are distinguished: the *back*, of which there are the anterior, 12, middle, 13, posterior, 14, regions; the latter also called the *rump*. Also, the *scapular* region, 15, being that of the shoulder-blade and humerus. The *sides* of the body are the parts under the wings. The *breast* commences at the lower part of the neck, 16, and extends to the end of the sternum, 17; from thence to near the tail is the *abdomen* or belly, 18.

In the *Tail* are distinguished, the *tail-quills*, or strong feathers, 19; and the *upper coverts*, 20, and *lower coverts*, 21.

The *Wings* are divided into three regions: the humerus, cubitus, and hand. The joint between the cubitus and hand, 22, is named the *flexure*, or bend of the wing; near it are the feathers attached to the thumb, 23, named the *alula*, or spurious wing; the quills attached to the fingers are named *primary quills*, 24, those which cover them, *primary coverts*, 25; the quills attached to the cubitus are named *secondary quills*, 26, their coverts, *secondary coverts*, 27; while the smaller feathers on the wing are named the smaller *upper*

wing-coverts, 28. There are corresponding *lower* wing-coverts.

In the *Posterior Extremities* are distinguished the *thigh*, very short, and generally concealed; the *leg* or tibia, 29, commonly but erroneously named the thigh; the instep or *tarsus*, 30, erroneously named the leg, generally bare, and having upon its surface plates or scales. Lastly, we have the *toes*, generally four, one directed backwards, 31, and named the hind or first toe; the rest directed forwards, 32, and named the anterior, or, counting from within, the second, third, and fourth toes. The toes are covered with plates and scales, and terminated by claws, or horny sheaths, which vary in size and form.

A few more explanations, referring especially to the bill, toes, and plumage, will be useful.

The *Bill* in birds is an instrument for the prehension of food, and is scarcely ever used for mastication, properly so called, that function being performed by the stomach. It varies greatly in size and form, according to the nature of the food, and accordingly affords some of the most obvious characters for distinguishing the different genera and families, which, in fact, may be easily known by the inspection of that organ alone. Thus, if we take the bill of a bird of the Rapacious order, a Falcon, Fig. 2, for example, we

Fig. 2.

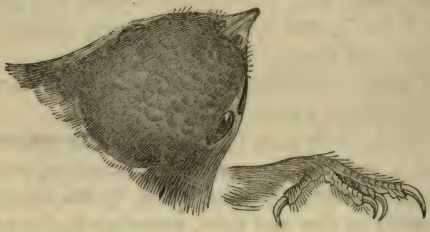


shall find it to be as described at p. 48, short, very strong, of nearly equal breadth and height at the base, moderately compressed, that is, flattened sidewise, toward the end; the

upper mandible having its upper outline convex from the base, the sides convex, the edges with a festoon about the middle, and toward the fore part an angular toothlike projection, the tip curved downwards, three-cornered, and sharp; the lower mandible with the angle or meeting of its crura wide and rounded, its lower outline very convex, the edges involute, or curved inwards, and having a rounded notch near the tip, which is truncate, or as if cut off abruptly.

The bill of a Swallow, Fig. 3, is very short, much de-

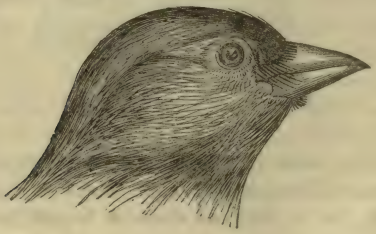
Fig. 3.



pressed, that is, flattened, or as if pressed downwards, and of a triangular form; its upper mandible with its upper or dorsal outline sloping but convex, the edges slightly inflected, or bent inwards, with a distinct notch, close to the tip, which is slender, but blunt; the lower mandible with the angle very wide, the dorsal outline a little convex, the tip rather sharp.

Again, the bill of a Chaffinch, Fig. 4, is short, straight,

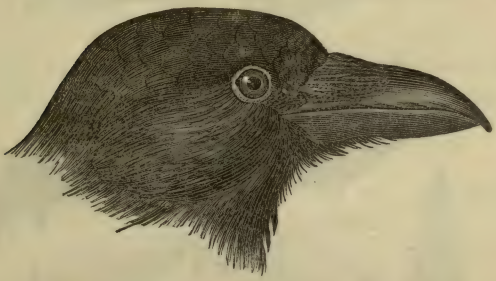
Fig. 4.



conical, about as broad as high at the base, compressed toward the end, and acute ; its upper mandible with its upper or dorsal line nearly straight, the ridge broad and convex, as are the sides, the edges inflected or bent inward, the notch obsolete or very slight, the lower mandible with the angle semicircular, the dorsal line straight, the back and sides convex, the edges inflected.

The bill of a Crow, Fig. 5, is rather long, straight, stout,

Fig. 5.



tapering, of nearly equal height and breadth at the base, but compressed toward the end ; its upper mandible has the dorsal outline slightly arched, towards the end bent downwards, the ridge rather narrow, the edges direct, that is, perpendicular, neither bent outwards nor inwards, and having a slight notch near the tip, which projects a little beyond the other, and is bent a little downwards ; the lower mandible has the angle of moderate length and width, the dorsal line a little convex, the tip rather sharp.

There can be no difficulty in understanding circumstances so simple as these. In considering the bill attention is also to be paid to the line formed by the two mandibles at their meeting. This, the *gape-line*, may be straight, or arched, or variously bent.

The *Tarsus* varies in length and thickness, and may be

bare, Fig. 6, or covered with feathers, Fig. 7, as may even the toes, Figs. 8 and 3.

Fig. 6.



Fig. 7.



Fig. 8.



Although in quadrupeds the number of *toes* or fingers is very frequently five, no birds have so many. By far the greater number have *four*, but very many have only *three*, and one species, the Ostrich, has no more than *two*. The hind toe is the *first*, the inner toe the *second*, the next the *third*, and the outer toe the *fourth*. The fourth toe is always present, so is the third, the second and first are wanting in the Ostrich; and it is the first or hind toe that is wanting in all birds that have only three toes. In the first toe there are always *two* joints, in the second *three*, in the third *four*, and

in the fourth *five*. All the species described in this volume have four toes. Generally one toe only, the first, is directed

Fig. 9.



backwards, Fig. 6; but sometimes also the fourth or outer toe, as is the case in Owls, Woodpeckers, Fig. 9, the Cuckoo,

Fig. 10.



and the Wryneck. The toes are generally covered above with large scales, named *scutella*, but in some species there are scutella only at the end, the other parts being covered with *scales*. The *claws* vary in length and form, but the terms used in describing them are easily understood. Thus they are nearly straight in the Lark, Fig. 6; arched in the Nuthatch, Fig. 10.

Fig. 11.



The *Plumage* varies in texture, being dense, compact, firm, glossy, loose, or downy. Each feather, Fig. 11, is composed of the *tube*, *a*; the *shaft*, *b*; the *outer web*, *c*, and the *inner*

Fig. 12.



web, *d*, always broader. Most feathers have a little additional or *accessory feather*, of a downy texture, attached. Thus in Fig. 12, *a c* is the feather, *b* the *plumule*. The latter is largely developed in the Gallinaceous birds, and wanting entirely in the Pigeons. The ordinary terminology applied to the leaves of plants is that which I adopt for distinguishing the forms of feathers. Thus,

Fig. 13.



Fig. 14.



Fig. 15.



Ovate, having the outline of an egg, Fig. 13.
Lanceolate, tapering at both ends, Fig. 14.
Linear, with the edges parallel, Fig. 15.
Abrupt, cut even at the end, Fig. 16.
Rounded, having the extremity broadly rounded, Fig. 17.
Obtuse, narrowly rounded, Fig. 13, 15.
Acute, sharp-pointed, Fig. 14.
Acuminate, with a long taper point, Fig. 19.
Abrupt and Acuminate, Fig. 18.
Emarginate, having a notch at the end, Fig. 20.

Fig. 16.



Fig. 17.



Fig. 18.



Fig. 19.



Fig. 20.



The *Wing* varies in length and breadth. Thus, it is short, broad, convex, and rounded, in Grouse and Partridges, Fig.

21 ; long, broad, straight, and pointed, in many Pigeons. In the Falcons, it is acuminate, the second quill being longest, and the first little shorter ; and in the Swallows is still more so, the first quill being longest, and the rest rapidly diminished in length, Fig. 22. In the Lark, Fig. 23, it is doubly pointed, as it were, the inner secondaries being much elongated.

Fig. 21.



Fig. 22.

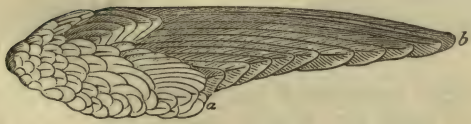


Fig. 23.



The *Tail* may be extremely short, short, moderate, long, extremely long, and of all intermediate gradations ; even at the end, Fig. 24 ; rounded, graduated, or wedge-shaped, Fig. 25 ; tapering, pointed, emarginate, Fig. 26 ; or forked, Fig. 27. The number of its quills varies from eight to

twenty or more, but in by far the greater proportion of birds is twelve.

Fig. 25.



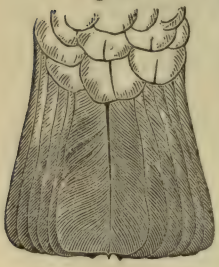
Fig. 26.



Fig. 27.



Fig. 24.



As great importance is justly attributed to the *Digestive Organs*, which vary much in form in the different tribes, and as I have always given the characters of those parts among those peculiarly distinctive of the orders, families, and genera, it is necessary here to say a few words respecting them. The *gullet* or *œsophagus* is that part which extends in the form of a tube from the mouth to the stomach. It is often of nearly uniform width, but sometimes dilated into a crop. The *stomach* is a roundish or oblong sac, having three coats, the outer muscular, the next thin and dense, the inner usually membranous, dense, and rugous or wrinkled. The *intestine* is an elongated tube, wider in its first fold, which is named the duodenum, towards the end having two appendages, named cœca, sometimes very small, sometimes

very large, and sometimes wanting, and at the extremity dilated into a globular or oblong sac named the *cloaca*.

Fig. 28.



Fig. 29.



In Fig. 28, which represents the digestive organs of a hawk, the *œsophagus* is wide, and dilated into a crop, then narrowed, with the *proventriculus*, or glandular lower part, moderate ; the *stomach* is rather large, round, with the muscular coat very thin, the tendons roundish ; the *intestine* rather short and wide, the *cœca* very small, the *rectum* or space between the cœca and the end short, and dilated into a globular *cloaca*.

In Fig. 29, that of the digestive organs of an owl, the œsophagus is very wide and nearly uniform, without crop ; the stomach extremely large and thin ; the intestine of moderate length and width ; the cœca large ; the cloaca globular.

In the Kingfisher, Fig. 30, the œsophagus is rather wide and tapering, the proventriculus moderate; the stomach very large and thin; the intestine very long and slender, without cœca; the cloaca globular.

Fig. 30.

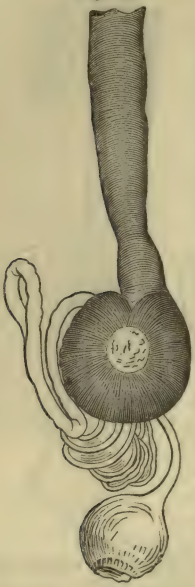
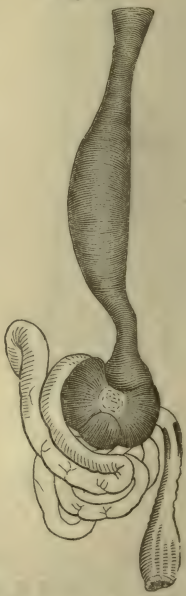


Fig. 31.



In the Finch, Fig. 31, the œsophagus is of moderate width, with a slight crop or dilatation on one side; the proventriculus bulbiform; the stomach roundish, with its muscular coat thick and divided into lateral and inferior muscles; the intestine of moderate length and width; the cœca very small; the cloaca oblong.

After opening up a few birds, and inflating the alimentary canal, the student will readily understand all the terms used in the description of these parts.

ORDER I. RAPTRICES. PLUNDERERS.

Bill cerate at the base, with the tip of the upper mandible elongated, tapering, and decurved. Tongue short, fleshy, concave above, with the tip rounded or emarginate; œsophagus very wide; stomach large, roundish, with the muscular coat thin, the epithelium soft; intestine of moderate capacity, being either of ordinary length and width, or very long and narrow; cloaca globular, and very large. Trachea nearly uniform, adpressed, with a single pair of inferior laryngeal muscles, or none. Eyes and apertures of ears generally large. Feet with four toes, which are placed in the same plane, padded and scabrous beneath; claws long, curved, and acuminate. Plumage full, down copious; wings large.

Birds of this order occur in all countries, and are characterized by their rapacious habits, solitary disposition, great quickness of sight, and powerful flight. They may be arranged into three families: VULTURINÆ, FALCONINÆ and STRIGINÆ, representatives of all of which occur in Britain. Of the first, however, only a single individual is recorded as having been obtained in England. But, of the second, nineteen, and of the third ten species, belong to our Fauna.

FAMILY I. VULTURINÆ. VULTURINE BIRDS, OR VULTURES.

Body robust; neck somewhat elongated; head of moderate size, or rather small, ovato-oblong. Bill of mode-

rate length, generally stout, sometimes rather slender; upper mandible cerate, compressed, with the tip elongated, decurved, rather obtuse, thin-edged; lower mandible rather slender, with the tip rounded and thin-edged. Tongue concave above, or induplicate, with the tip rounded or slightly emarginate, and horny beneath; œsophagus very wide, dilated into a most capacious crop; proventriculus wide; stomach large, thin, or moderately muscular, with a soft rugous epithelium; intestine of moderate length and width; cœca minute or wanting. Trachea considerably flattened, somewhat tapering, and composed of slender rings; inferior larynx much flattened, its last entire ring without septum; bronchi partly membranous; no inferior laryngeal muscles, the contractors terminating in the sterno-tracheal. Eyes of moderate size. Apertures of ears rather small and simple. Nostrils oblong, large, or of moderate size. Tarsus stout, bare, shorter than the middle toe, which is very long, hind toe small, second a little shorter than fourth; anterior toes connected by basal webs; claws large, moderately curved, acute. Head and part of neck destitute of feathers; but more or less covered with down or hairs; plumage full, rather compact; feathers generally ovate, those on the neck lanceolate; wings very long, broad, with the third, fourth, and fifth quills longest; tail of moderate length, with from twelve to sixteen feathers.

The Vulturine Birds inhabit the tropical and warmer temperate regions of both continents, seldom extending into the colder. They feed on animal substances, recent or putrid. Some of the larger species capture their prey by grasping, but others, having the claws less curved, employ the bill, or are content with carcasses. They descry their food from great distances, soar to a vast height, sail in circles, fly sedately, but with considerable speed, and are gregarious on occasion, some of the smaller species being habitually so. Undigested substances are dis-

gorged in pellets. They nestle on the ground or on rocks, forming a rude nest, and laying from two to four ovate or oblong eggs. The young, at first covered with down, remain until fully fledged.

Only a single individual of one of the smaller species has been shot in Britain.

GENUS I. NEOPHRON. NEOPHRON.

Bill nearly as long as the head, straight, slender, slightly compressed; upper mandible cerate to beyond the middle, with the dorsal line nearly straight, the tip decurved and pointed; lower mandible with the angle long and narrow, the dorsal line convex and short, the sides nearly erect, the tip obtuse. Nostrils large, oblong, medial. Eyes and auditory apertures of moderate size. Feet rather short and stout; tarsus roundish, with small angular scales; toes scutellate only toward the end, the first very small, the third very long, the second shorter than the fourth; the anterior toes webbed at the base. Claws rather long, arched, moderately compressed. Fore part of head and throat without feathers, but with scattered downy or bristly plumelets; plumage full; wings very long and broad, with the first quill short, the third longest; tail of moderate length, much rounded, of fourteen feathers. This genus belongs to Asia, Africa, and Southern Europe.

1. Neophron Percnopterus. White Neophron.

Adult male and female with the plumage white, excepting the primary quills and basal part of the secondaries, which are black. Young dark brown, patched with brownish-yellow; subsequently of the latter colour.

Male, 27, . . , 18, $2\frac{1}{2}$, $3\frac{1}{4}$, 3, $\frac{1}{12}$. Female somewhat smaller.

Generally distributed in Africa, Asia, and the south of Europe. Feeds chiefly on carrion, offal, and refuse, but attacks lizards, serpents, and small quadrupeds. In October 1825, a young individual was killed in Somersetshire, and was obtained by the Rev. A. Mathew of Kilve, who lent it to Mr Selby, by whom it has been figured and described in his Illustrations. Another individual was seen in the neighbourhood a few days.

White Vulture, Brown Vulture. Pharaoh's Chicken. Vultur Percnopterus, Gmel. Syst. Nat. i. 249. Adult. Vultur fuscus, i. 248, Young. — Cathartes Percnopterus, Temm. Man. d'Ornith. i. 8; iii. 6.—Neophron Percnopterus, White Neophron, MacGillivray, Brit. Birds, iii. 166.

FAMILY II. FALCONINÆ. FALCONINE BIRDS, OR HAWKS.

Body robust, moderate, or slender; neck short; head rather large, roundish, little convex above. Bill short, stout, compressed toward the end; upper mandible cerate, with the edges sharp, and a sinus or notch near the tip, which is elongated, decurved, somewhat trigonal, acute; lower mandible with the angle wide, the dorsal line convex, the edges sharp and decurved or emarginate close to the rounded tip. Tongue fleshy, deeply emarginate and papillate at the base, with the sides nearly parallel, the tip rounded and horny beneath; œsophagus very wide, dilated into a large crop; proventriculus wide; stomach large or of moderate size, roundish, with the muscular coat thin, the epithelium soft, and more or less rugous; intestine generally rather short and of moderate width, sometimes very long and narrow, being in either case of moderate capacity; cœca extremely small, sometimes wanting; cloaca large and globular. Trachea considerably flattened, of slender rings; inferior larynx with a single pair of muscles, and the last entire ring partitioned. Eyes large, lateral, somewhat inclined forwards; both eyelids equally mobile. Nostrils small or of moderate size, varying in figure. Apertures of ears rather large, simple. Legs very muscular; tarsus short or of moderate length; toes four, the first large and stout, the third long, the second larger than the fourth, the anterior somewhat webbed at the base, all scutellate toward the end, padded and papillate beneath; claws

long, curved or arched, tapering, very acute. Plumage generally full; down very soft and copious; wings large, of moderate length or very long; tail of twelve feathers. The wings and tail vary extremely in length and form. The bill and feet also present various modifications.

Falconine Birds are met with in all climates. They prey on animals of various kinds, which they pursue on wing, and seize with their feet, thrusting into them their long acuminate claws. The feathers, hair, and bones of their victims are disgorged in pellets. Their senses of sight and hearing are very acute, their flight powerful. They are generally incapable of walking, but perch with ease, and when roosted keep the body nearly erect. Although solitary, some species congregate occasionally when food is abundant. Their cries are loud and shrill. They nestle on rocks, on trees, or on the ground, forming a rude nest, or sometimes occupying that of another bird, and lay from two to eight eggs, the larger species having fewer than the smaller. The young, which are at first covered with light-coloured down, remain until fully fledged. The colours of the plumage change, and are not perfected until the third or fourth year. Sometimes also the female differs in colour from the male. The males are always much smaller than the females. When the sexes differ in colour, the young resemble the female, which is generally darker and more variegated than the male.

GENUS II. BUTEO. BUZZARD.

Bill short, compressed toward the end, with the upper outline sloping a little to the edge of the cere, then decurved, the sides rapidly sloping, the edges with a distinct rounded festoon. Tongue short, rather narrow, concave above, with the tip rounded and emarginate; crop very large; stomach large, round, a little compressed, its coats thin; pylorus with three or four prominent rugæ; intestine of moderate length, rather wide; cœca very small. Nostrils elliptical, oblique.

Eyes large, with a broad superciliary ridge. Head large, broad, flattened. Feet short, robust; tarsus feathered in front half-way down, anteriorly and posteriorly scutellate, or feathered in its whole length; toes of moderate length, rather stout, all scutellate toward the end, the first and second stoutest; claws long, well-curved, tapering, very acute, flat beneath. Plumage full, soft. Wings long, broad, rounded, the fourth quill longest, the outer four with the inner web abruptly narrowed. Tail of moderate length, or rather long, broad, and rounded.

Among the least active birds of this family, but having a strong, buoyant flight. They sail in circles, mounting to a great height; but when searching for food, fly low over the fields. They seldom pursue birds on wing; feed on quadrupeds, birds, reptiles, insects, and worms.

2. Buteo fuscus. Brown Buzzard.

Tarsi bare in their lower part. Male with the upper parts deep brown, the feathers margined with paler, the lower parts yellowish-white, with longitudinal oblong brown spots, the tail with numerous brown and pale bands. Female deep brown above and beneath, the throat streaked with whitish, the breast spotted with the same. Young of a lighter brown, with the feathers margined with light red.

Male, 19, 49, 16½, 1 7/8, 2 1/2, 1 7/8, 1/2. Female, 21, 50.

Generally distributed in Britain. Occurs also in Ireland. Feeds on small quadrupeds, birds, lizards, beetles, larvæ, and even earth-worms. In its soaring flight it greatly resembles the Golden Eagle, to which it is closely allied. Nestles in trees, and in rocky places on the ground. Eggs three or four, broadly elliptical, 2¼ inches in length, 1 1/2 in breadth, dull white, spotted and patched with yellowish-brown.

Glead. Glade. Kite. Puttock. Common Buzzard.

Falco Buteo, Linn. Syst. Nat. i. 127.—Falco Buteo, Temm. Man. d'Orn. i. 63; iii. 35.—Buteo fuscus, Brown or Common Buzzard, MacGillivray, Brit. Birds, iii. 133.

3. Buteo lagopus. Rough-legged Buzzard.

Tarsi feathered to the toes. Upper parts brown, the head and neck streaked with white; lower parts yellowish-white, with a broad patch of brown on the breast; the tail white for more than half its length. Old birds almost entirely choco-

late brown, the forehead and base of the tail white, the latter barred with white and brown.

Male, 21, 51, 17, $1\frac{4}{12}$, $2\frac{1}{2}$, $1\frac{3}{12}$, $\frac{1}{12}$. Female, $23\frac{1}{2}$, 56.

Easily distinguished, being the only British Falconine Bird, except the Golden Eagle, that has the tarsi feathered. It exhibits great variation in the tints of the plumage. Black or dark brown individuals, occasionally seen in America, and supposed to be adult or old, have never been observed with us; but one, shot in Dumfriesshire in March 1840, had a great number of young feathers of a blackish-brown colour, and would have been entirely of that tint, had the moult been completed. A winter visitant in Britain and Ireland.

Rough-legged Falcon.

Falco lagopus, Gmel. Syst. Nat. i. 260.—Falco lagopus, Temm. Man. d'Ornith. i. 65; iii. 37.—Buteo lagopus, Rough-legged Buzzard, MacGillivray, Brit. Birds, iii. 193, 736.

GENUS III. AQUILA. EAGLE.

Bill shorter than the head, very high, gradually compressed from the base; upper mandible with the dorsal line nearly straight along the cere, the ridge broad and convex, the edges with a slight festoon, the tip prolonged, decurved, trigonal, acute; lower mandible with the angle of moderate width and rounded, the dorsal line convex, as are the sides, the tip rounded. Mouth wide; tongue fleshy, deeply emarginate and papillate at the base; concave above, with the sides nearly parallel, the tip rounded; œsophagus very wide, dilated into a large crop; stomach large, roundish, its muscular coat thin, the epithelium soft; intestine rather short, of moderate width, the duodenum forming a single loop; cæca very small; cloaca very large and globular. Nostrils broadly elliptical, oblique. Eyes large, with a broad projecting superciliary ridge. External aperture of ear large, roundish. Head large, roundish, flattened above; neck rather short; body very robust. Feet of moderate length, very stout; tarsus very short, thick, feathered to the tarso-digital joint; toes of moderate length, stout, the first and second shortest and thickest, the third next in length, but the most slender, and connected with the fourth by a pretty large web, all scutellate toward the end; claws strong, curved, tapering, laterally flattened, concave beneath, very

acute. Plumage compact, full. Wings very long, broad, rounded, the first and eighth quills about equal, the fourth longest; the first six abruptly cut out on the inner web, and narrowed on the outer. Tail of moderate length, or rather long, broad, rounded, and extending considerably beyond the wings.

The Eagles are powerful and vigorous birds, rather heavy and somewhat slow, like the Buzzards, to which they are nearly allied. They sail in circles, ascend to a vast height, but when searching for food fly low over the ground. They prefer mountainous regions, and are generally distributed.

4. Aquila Chrysaetus. Golden Eagle.

Tail slightly rounded, longer than the wings; the general colour of the plumage brown; the feathers of the head, neck, tarsus, and inner part of the tibia, light yellowish-brown; the tail brownish-black, more or less variegated with grey. Young dark brown, with the bases of all the feathers whitish; the basal half of the quills and larger wing-coverts, and three-fourths of the tail, white; inner tibial and tarsal feathers white. As the bird advances in age, the white of the basal portion of the feathers diminishes, until the quills and tail ultimately become dark brown, irregularly banded and mottled with grey.

Male, 33, 72, 24, $2\frac{8}{12}$, 4, $2\frac{5}{12}$, $1\frac{1}{12}$. Female, 37, 87.

Not uncommon in many parts of the Highlands and Hebrides; rare in Shetland and Orkney; does not breed south of the Clyde and Tay, but is occasionally seen in various parts of England. Resident also in Ireland. Nestles on rocks, forming a large nest of sticks, heath, seaweeds, wool, and other substances, and lays two eggs, sometimes one, very rarely three, broadly ovate, 3 inches long, $2\frac{1}{8}$ in breadth, white, clouded and spotted with light brown, or white with a few reddish dots. The food of this species consists of the flesh of hares, rabbits, lambs, fawns, moles, grouse, ptarmigans, partridges, curlews, plovers, and other species; besides, occasionally, carrion of various kinds.

Black Eagle. Brown Eagle. Ring-tailed Eagle.

Falco Chrysaetos and F. fulvus, Linn. Syst. Nat. i. 125, Adult and Young.—Falco fulvus, Temm. Man. d'Ornith, i. 38. —Aquila Chrysaetus, Golden Eagle, MacGillivray, Brit. Birds, iii. 204.

GENUS IV. HALIAETUS. SEA-EAGLE.

Bill nearly as long as the head, very high, gradually compressed toward the end, with the upper outline nearly straight to the edge of the cere, the sides flattish and nearly erect; upper mandible with the edges slightly festooned, the tip elongated, trigonal, decurved, acute; lower mandible scarcely a third of the height of the upper, with the angle long and of moderate width, the dorsal line nearly straight, the tip rounded. Mouth wide; tongue fleshy, deeply emarginate and papillate at the base, concave above, with the sides nearly parallel, the tip rounded; œsophagus very wide, with a very large crop; proventriculus wide; stomach large, roundish, with its muscular coat thin; intestine very long and narrow, duodenum extremely elongated, and disposed into a coil of several folds; cœca very small; cloaca very large and globular. Nostrils oblong, oblique. Eyes large, with projecting superciliary ridges. Aperture of ear rather large and roundish. Head large, roundish-ovate; neck of moderate length; body robust. Feet short, very strong; tarsus very short, feathered half-way down, then scaly, with anterior and posterior scutella; toes very stout, scutellate toward the end, the first and second strongest, and about equal, the fourth a little longer than the second, the third much longer; claws very large, well curved, flattened on the sides, concave beneath, acute, the first and second largest. Plumage compact and full. Wings very long, broad, rounded, the first a little shorter than the seventh, the third and fourth longest; the first five with the inner web abruptly cut out. Tail of moderate length, broad, rounded, extending considerably beyond the wings.

The Sea-Eagles are birds of large size, but less bold and vigorous than the Eagles properly so called. Fish forms a great portion of their food. They also feed on carrion, and occasionally attack living animals, sometimes even those of considerable size. They sail in circles, ascending to a vast height, and in habits generally differ little from the Eagles.

5. Haliaetus Albicilla. White-Tailed Sea-Eagle.

Adult with the bill, feet, and irides yellow; the plumage

of the head, neck, and part of the back and breast, greyish-yellow, or pale brown tinged with grey; of the hind part of the back darker; the abdomen and legs chocolate-brown; the quills brownish-black, the tail white. Individuals of a pale greyish-purple, in parts approaching to ash-grey, are seen, especially in captivity. Young with the bill brownish-black, the irides brown, the feet yellow; the plumage pale brown, with elongated dark brown spots, the bases of all the feathers brownish-white; the tail dark brown, irregularly variegated with white. At the first moult the light brown becomes darker, and the proportion of white is somewhat diminished, unless on the tail, where it is on the contrary increased. At each successive moult, the bill assumes a lighter tint, passing through shades of brown, until it ultimately becomes pale yellow; the iris undergoes a similar change; the proportion of white at the base of the feathers diminishes, the dark part enlarges in extent, but becomes paler; the tail-feathers, at first freckled with white, or brownish-white, become patched, and finally, at the age of six or seven years, pure white.

Male, 36, 72, 24, $3\frac{5}{12}$, 4, 3, $1\frac{5}{12}$. Female, 40, 80.

Common in the Hebrides, on the Northern and Western coasts of the Highlands. Rare in Shetland and Orkney, occurs in Galloway. Not uncommon in some parts of Ireland. Breeds on cliffs on the sea-shore, as well as in the interior, forming a very bulky nest of sticks, twigs, heath, often dry sea-weeds, as well as tufts of grass, wool, and other materials. The eggs, two in number, are broadly ovate, pure white, or yellowish-white, generally with some pale red dots or spots chiefly at the larger end. Its food consists of carrion, dead fish, small quadrupeds, young sea-birds, grouse, and other animals. Although less destructive to living animals than the Golden Eagle, it sometimes carries off young lambs.

Cinereous Eagle. Grey Eagle. Sea Eagle. Erne. Osprey.

Vultur Albicilla, Linn. Syst. Nat. i. 123.—Falco Albicilla, Temm. Man. d'Ornith. i. 49.—Haliaetus Albicilla, White-tailed Sea-Eagle. MacGillivray, Brit. Birds, iii. 221.

GENUS V. PANDION. OSPREY.

Bill shorter than the head, stout, high, gradually compressed; upper mandible with the dorsal line a little declinate and slightly convex, the sides rapidly sloping and convex, the edges festooned, the tip elongated, decurved, trigonal, very acute; lower mandible with the angle short and rather

wide, the dorsal line convex, the tip obliquely truncate and rounded. Mouth rather wide; tongue short, emarginate and finely papillate at the base, concave above, rounded; œsophagus very wide, with a large crop; proventriculus wide; stomach large, round, with the muscular coat thin; intestine extremely long and slender, forming very numerous convolutions; cœca very short; cloaca very large and globular. Nostrils oblong, oblique. Eyes of moderate size, without projecting superciliary ridge. Aperture of ear rather small, and roundish. Head ovate, of moderate size; neck of moderate length; body compact. Feet very robust; tibiæ long and muscular; tarsi very short, thick, covered all round with imbricated scales, of which the posterior are pointed; toes thick, strong, free; the fourth versatile and longer than the second, all with a few broad scutella at the end, the scales on the sides, and especially on the lower surface, rising into a conical central point, some of them on the inner side of the outer toe being so prominent as to resemble short spines; claws long, rather slender, well curved, rounded above and beneath, with the sides flattened, and the tip very acute; those of the hind and outer toes largest. Plumage compact; the feathers on the head and neck tapering, on the body broad and rounded; on the tibia short, slender, and rather soft, without the outer elongated tuft seen in the Eagles, Buzzards, and most other genera. Wings extremely long, comparatively narrow, rounded, with the first quill longer than the fifth, the third longest. Tail rather long, a little rounded, shorter than the folded wings.

This genus is easily distinguished by the extreme elongation of the intestine, the convexity of the claws beneath, the want of a tuft of feathers on the outer side of the tibia, the conical form of the scales on the lower surface and sides of the toes, and the great length of the wings. The Ospreys feed chiefly on fish, which they seize as they approach the surface.

6. Pandion Haliaetus. Fishing Osprey.

Adult with the bill bluish-black, the cere light blue, the feet pale greyish-blue; the plumage above deep umber-brown, the upper part of the head and neck white, the middle of the

crown dark brown; a broad band of blackish-brown, on the cheeks and neck; the lower parts white, the neck streaked with brown. Young with the feathers of the upper parts deep brown, terminally margined with reddish-white.

Male, 24, 64, 20, $1\frac{1}{12}$, $2\frac{1}{4}$, $1\frac{9}{12}$, $1\frac{7}{12}$. Female, 26, 68.

Generally dispersed in England and Scotland, but rare, and apparently migratory. Breeds on some of the Scottish lakes, as Loch Lomond and Loch Awe. Feeds exclusively on fishes, which it captures by plunging after them on their approaching the surface. Its flight is sedate, buoyant, and graceful, and it hovers over the water with an undulatory motion of the wings. The nest, which is bulky, is placed on a rock, old building, or tree; and the eggs, three or four in number, are roundish, white, with large patches of brown, $2\frac{4}{12}$ long, $1\frac{9}{12}$ broad. The intestine of a male examined by me was eleven feet 3 inches long, its widest part $\frac{3}{12}$ across, the narrowest $\frac{2}{12}$. The œsophagus and stomach being $11\frac{1}{2}$ inches, the whole length of the alimentary canal was 12 feet, $2\frac{1}{2}$ inches.

Fishing Eagle. Fish Hawk. Bald Buzzard.

Falco Haliætus, Linn. Syst. Nat. i. 129.—Falco Haliætus, Temm. Man. d'Ornith. i. 47; ii. 25.—Pandion Haliaetus, Fishing Osprey, MacGillivray, Brit. Birds, iii. 239.

GENUS VI. PERNIS. BEE-HAWK.

Bill shorter than the head, somewhat broader than high at the base, compressed toward the end, strong; upper mandible decurved from the base, with the sides convex, the edges with a very slight festoon, the tip descending, slender, acute; lower mandible with the angle of moderate length, broad, and rounded, the dorsal line convex, the tip rounded. Mouth rather wide; tongue short, with the base concave and papillate, the upper surface deeply concave, the sides nearly parallel, the tip rounded but emarginate; œsophagus very wide, dilated into a very large crop; proventriculus wide; stomach large, roundish, its muscular coat very thin; intestine of moderate length, rather wide; no cœca; cloaca elliptical, very large. Nostrils linear-oblong, oblique. Eyes rather large; eyelids destitute of ciliary bristles: the supraocular ridge small. Aperture of ear large, transversely elliptical. Head ovate, flattened above, of moderate size; neck rather short; body rather elongated, moderately full. Legs short,

robust; tarsi very short, strong, roundish, feathered halfway in front, then covered with large hexagonal scales; toes of moderate length, strong, the first stoutest, the fourth most slender, and connected with the third by a basal web, all scutellate at the end, and covered beneath with roundish, hard papillæ; claws long, arcuate, rather slender, concave beneath, acute, those of the first and second toes nearly equal and strongest, the third longest. Plumage compact, soft; feathers on the fore part of the head, cheeks, loral space, and chin, very small, ovate-oblong, obtuse, compact; wings very long, broad, rounded, with the third quill longest, the outer five quills abruptly cut out on the inner web; tail long, broad, even or slightly emarginate.

This genus, of which the species are not numerous, and only one British, is distinguished from all others by the imbricated, squamiform feathers on the parts about the base of the bill. It seems closely allied to Milvus, Buteo, and Pandion.

7. Pernis apivora. Brown Bee-Hawk.

Tail with four broad and numerous small dusky bands; wings with two similar bands. Adult male with the anterior part of the head brownish-grey, the upper parts deep brown, the throat white, with longitudinal dark lines, the rest of the lower parts white, with broad bands and spots of brown. Young male with the head brown, anteriorly tinged with grey, the upper parts deep brown, the throat light reddish, with longitudinal dark lines, the rest of the lower parts deep brown, with darker longitudinal lines. Female with the forehead bluish-grey, the upper parts deep brown, the lower pale yellowish-red, with large reddish-brown spots. Young with the head white, spotted with brown, the upper parts deep brown, the feathers broadly edged with light red, the lower parts light yellowish-red, spotted with brown.

Male, 24½, 52, 16¾, 1 4/12, 1 1/12, 1 9/12, 1 3/12.

Only five individuals recorded as killed in Scotland, one in Braemar, one at Dunkeld, one near Stirling, one at Chatelherault in the parish of Hamilton, the other at Drumlanrig in Dumfriesshire. It becomes more frequent as we advance southward, but is still of rare occurrence, and appears to be a summer visitant, all the specimens whose dates of capture or death are recorded, having been obtained at that season or in

autumn. A few instances of its breeding in England are known; and one has occurred in Scotland, in the woods of Abergeldie, in Aberdeenshire. The eggs are broadly elliptical, $2\frac{1}{2}$ inches long, $1\frac{6}{12}$ broad, white, blotched with brown. Remarkable for its predilection for the larvæ of bees and wasps.

Honey Buzzard.

Falco apivorus, Linn. Syst. Nat. i. 130.—Falco apivorus, Temm. Man. d'Ornith. i. 67.—Pernis apivora, MacGillivray, Brit. Birds, iii. 254.

GENUS VII. MILVUS. KITE.

Bill shorter than the head, somewhat broader than high at the base, much compressed toward the end, strong; upper mandible with the dorsal line decurved from the base, the sides rapidly sloping, the edges with a slight festoon, the tip decurved, trigonal, tapering, rather blunt; lower mandible with the angle large and wide, the dorsal line slightly convex, the sides convex, the tip rounded. Mouth wide; tongue short, sagittate and papillate at the base, concave above, rounded and emarginate; œsophagus wide, about the middle dilated into a moderate crop; proventriculus wide; stomach roundish, its muscular coat thin; intestine of moderate length, slender; cœca very small; cloaca very large and globular. Nostrils rather small, elliptical, oblique. Eyes large, superciliary ridge prominent. Aperture of ear large, roundish. Head of moderate size, ovate, rather flattened above; neck short; body moderately full. Legs short, robust; tarsi very short, roundish, feathered for more than a third, scutellate in front; toes of moderate length, strong, the first and second nearly equal, the fourth more slender and connected by a basal web with the third, all scutellate above nearly in their whole length; claws long, well curved, tapering, compressed, very acute, the first and second largest. Plumage full and soft; feathers of the head, neck, and breast pointed; wings extremely long, broad, narrow, the first quill short, the third longest; tail very long, broad, forked or emarginate.

Milvus is distinguished from Pernis by the still more elongated wings and tail, the bristly covering of the loral space, and the more curved claws. The kites are remark-

able for their gliding and buoyant flight. They are not numerous, and only one species occurs in Britain.

8. Milvus regalis. Red Kite.

Male with the upper parts reddish-brown, marked with longitudinal blackish-brown streaks, the lower parts light brownish-red, with narrower dusky streaks. Female with the head and upper part of the neck greyish-white, streaked with dusky; the other parts as in the male. Young of a duller brownish-red, with the central dark markings of the feathers broader. Tail deeply emarginate.

Male, 25, 61, 19, $1\frac{6}{12}$, 2, $1\frac{7}{12}$, $\frac{1}{12}$. Female, 27, 63.

The Kite is distinguished from the other native birds of this family by the superior elegance of its buoyant flight, as well as by its elongated wings, and deeply emarginate tail. It is generally distributed, but of rare occurrence in any district. When searching for food it moves along at a moderate height, wheeling and gliding in an undulatory course, and proceeding at intervals with motionless wings. It preys on small quadrupeds, reptiles, insects, occasionally birds, and sometimes eats of carrion of various kinds. The nest, which is bulky, is placed in the fork of a tree. The eggs, two or three, are of a short oval form, $2\frac{2}{12}$ inches in length, $1\frac{9}{12}$ in breadth, white, with a few reddish-brown dots or spots.

Common Kite. Gled, Glead. Red Gled. Salmon-tailed Gled or Kite. Crotched-tailed Puttock.

Falco Milvus, Linn. Syst. Nat. i. 126.—Falco Milvus, Temm. Man. d'Ornith. i. 59.—Milvus regalis, Red Kite, MacGillivray, Brit. Birds, iii. 266.

GENUS VIII. NAUCLERUS. SWALLOW-KITE.

Bill short, broader than high at the base, much compressed toward the end, of moderate strength; upper mandible with the dorsal line declinato-decurvate from the base, the sides nearly flat, the edges with a slight festoon, the tip declinate, slender, acute; lower mandible with the angle very wide, the dorsal line slightly convex, the edges much decurved toward the end, which is rounded. Tongue somewhat decurved, emarginate, and finely papillate at the base, flat above, its tip narrow and acutely emarginate; œsophagus of nearly uniform width, being destitute of crop, and thus

resembling that of the Owls; stomach very large, round, its muscular coat very thin; intestine short and rather wide; no cœca; cloaca large, globular. Nostrils round, with a central papilla. Eyes large. Aperture of ear roundish and rather large. Head roundish, flattened above; neck short; body compact. Feet short, tarsus very short, robust, covered all round with scales: toes of moderate size, scutellate above; claws rather long, well curved, slender, acuminate. Plumage blended, glossy; wings extremely elongated, rather narrow, pointed, the third quill longest; tail extremely long, very deeply forked.

9. NAUCLERUS FURCATUS. WHITE-HEADED SWALLOW-KITE.

Head, neck, and lower parts white; back, wings, and tail black; bill bluish-black, feet greenish, claws flesh-coloured.

Male, 22, 47, 18, $1\frac{2}{12}$, $1\frac{1}{4}$, $\frac{1}{12}$, $\frac{7}{12}$.

This bird is distinguished from all the British falconine species by its very long and deeply forked tail, as well as by its peculiar colouring. Its proper country is the tropical and temperate regions of America. Two individuals, however, are recorded as having been met with in Britain: one killed at Ballychulish in Argyleshire, in 1772; the other caught at Shawgill in Yorkshire, in September 1805. Its flight is described as singularly beautiful, its motions astonishingly rapid. It generally feeds while on wing; and its food consists of grasshoppers, insects, small snakes, lizards, and frogs.

Swallow-tailed Hawk. Swallow-tailed Kite.

Falco furcatus, Linn. Syst. Nat. i. 129.—Falco furcatus, Audubon, Orn. Biog. i. 368; v. 371.—Nauclerus furcatus, Aud. Synop. 14.—Nauclerus furcatus, White-headed Swallow-Kite, MacGillivray, Brit. Birds, iii. 277.

GENUS IX. FALCO. FALCON.

Bill short, very strong, of nearly equal breadth and height at the base, moderately compressed toward the end; upper mandible with the dorsal line convex from the base, the sides convex, the edges with a medial festoon and an anterior angular process, the tip decurved, trigonal, acute; lower mandible with the angle wide and rounded, the dorsal line very convex, the edges involute, with a rounded notch on

each side near the tip, which is truncate. Mouth wide; tongue short, fleshy, sagittate and papillate at the base, concave above, with the sides nearly parallel, the tip rounded and emarginate; œsophagus wide, with a large crop; proventriculus wide; stomach large, round, its muscular coat very thin; intestine of moderate length and width; cloaca elliptical or globular, very large. Nostrils round, with a central papilla. Eyes large, with the superciliary ridge prominent. Aperture of ear round, rather large. Head large, round, flattened above; neck short; body compact, firm, muscular. Feet of moderate length, stout; tarsus short, rounded, covered with scales, of which the anterior are larger and somewhat hexagonal; toes strong, scutellate above, the first short, the third much longer than the fourth, which exceeds the second, and is connected by a basal membrane; claws long, well curved, flat beneath, tapering to a fine point. Plumage generally compact; feathers of the head short and narrow, of the back and breast ovate or oblong; wings very long and pointed, the second quill longest, the first little shorter, one or both having the inner web abruptly cut out; tail long, broad, rounded.

The Falcons, which are considered as the typical or pre-eminently characteristic birds of this family, are generally distributed. Being compact and muscular, they fly by regular beats, sailing little, and descend perpendicularly or obliquely on their prey, which they capture in the air as well as on the ground. Their food consists of small quadrupeds, birds of various kinds, reptiles, and insects. They breed on rocks, in trees, or on the ground, forming a bulky nest, and laying from three to six roundish or broadly ovate eggs, generally speckled or spotted with red or brown. The young are covered with thick white down. The males in this genus are much smaller than the females. Six species occur in Britain.

10. Falco Gyrfalco. The Gyrfalcon.

Adult of both sexes white, having the upper parts marked with semilunar or sagittiform dark grey spots; the bill light blue, the cere and feet pale yellow. Young brownish-grey above, spotted with yellowish or reddish-white, the tail with numerous light bars, which on the middle feathers are gene-

rally opposite, but sometimes alternate, the lower parts yellowish-white, longitudinally spotted with dusky.

Male, 21, .., $15\frac{1}{2}$, $2\frac{1}{2}$, 2, 1. Female, $23\frac{1}{2}$, $51\frac{1}{4}$.

This species, the most powerful, and one of the most beautiful of its genus, has frequently been met with in various parts of Scotland as well as in England, although it can scarcely be considered as a permanent resident, there being no authentic account of its breeding with us. It occurs in Norway, Sweden, and several of the northern countries of Europe; in Iceland, Greenland, Labrador, and the fur countries of North America.

Jer Falcon. Jerkin. Iceland Falcon. Greenland Falcon.

Falco Gyrfalco and rusticolus, Linn. Syst. Nat. i. 130, 125.—Falco islandicus, Temm. Mann. d'Ornith. i. 17; iii. 9.—Falco Gyrfalco, Gyr Falcon, MacGillivray, Brit. Birds, iii. 284.

11. Falco peregrinus. Peregrine Falcon.

Wings when closed about half an inch shorter than the tail. Adult male with the head, hind neck, and a broad band on the cheeks, black, the upper parts deep bluish-grey, fading behind into ash-grey, and barred with greyish-black, the lower parts white, the breast and sides transversely spotted and barred with dusky. Female with the upper parts more dusky, the lower reddish-white, with larger markings. Young with the upper parts deep brownish-black, faintly spotted with reddish, each feather tipped with light red, the lower parts yellowish-white, with longitudinal dusky streaks.

Male, $16\frac{1}{2}$, $36\frac{1}{2}$, $12\frac{1}{4}$, $1\frac{1}{12}$, $1\frac{9}{12}$, 2, $\frac{9}{12}$. Female, $19\frac{1}{2}$, $42\frac{1}{2}$.

Equal in beauty of form, and little inferior in strength or spirit, the Peregrine Falcon is next in size to the Gyr Falcon, which it nearly equals in the estimation of those who train rapacious birds for the chase. Although nowhere very numerous, it is extensively distributed in Britain and Ireland. It preys upon ptarmigans, partridges, grouse, pheasants, mallards, teal, pigeons, gulls, puffins, auks, guillemots, rabbits, and young hares. Its flight is rapid, its course desultory, seldom in circles, although it sometimes hovers. It reposes on cliffs, whether on the coast or in the interior, and there nestles, laying three or four broadly elliptical eggs, 2 inches in length, $1\frac{7}{12}$ in breadth, dull light red, dotted and patched with darker red.

Blue Hawk. Grey Hawk. Hunting Hawk. Goshawk. Falcon. Common Falcon.

Falco peregrinus, Lath. Ind. Ornith. i. 33.—Falco pere-

grinus, Temm. Man. d'Ornith. i. 22; iii. 11.—Falco peregrinus, Peregrine Falcon, MacGillivray, Brit. Birds, iii. 294.

12. Falco Subbuteo. Hobby Falcon.

Wings when closed extending beyond the tail. Male with a black cheek-band, the upper parts greyish-black, the lower yellowish-white, with longitudinal brownish-black streaks, the lower tail-coverts and tibial feathers red. Female with the upper parts dark brown, the lower reddish-white, with broader dark brown markings, the lower tail-coverts and tibial feathers of a lighter red.

Male, 12, 26, 10, $\frac{3}{12}$, $1\frac{5}{12}$, $1\frac{4}{12}$, $\frac{5}{12}$. Female, 14, 28.

Of unfrequent occurrence in England, and not hitherto observed in Scotland. It preys upon small birds and insects, seems to prefer inland situations, and, according to Montagu, builds in trees, sometimes taking possession of a crow's deserted nest. The eggs, three or four in number, are broadly elliptical, bluish-white, blotched with greenish-brown, $1\frac{8}{12}$ inch long, $1\frac{2\frac{1}{2}}{12}$ in breadth.

Falco Subbuteo, Linn. Syst. Nat. i. 127.—Falco Subbuteo, Temm. Man. d'Ornith. i. 25; iii. 12.—Falco Subbuteo, Hobby Falcon, MacGillivray, Brit. Birds, iii. 309.

13. Falco vespertinus. Orange-legged Falcon.

Wings when closed about the same length as the tail. Male with the plumage of a uniform deep greyish-blue, excepting that of the abdomen and legs, and the lower tail-coverts, which are bright yellowish-red; cere orange-red, feet reddish flesh-colour. Female with the upper part of the head and the hind neck yellowish-red, the back greyish-blue, barred with black, the tail bluish-grey with black bands, the lower parts light yellowish-red, with oblong brown spots. Young with the head reddish-brown, with black shaft-lines; the feathers of the back deep brown, edged with light red, the space about the eyes blackish, the lower parts yellowish-white, with longitudinal brown spots.

Male, 12, ..., 9, $\frac{2}{12}$, $1\frac{4}{12}$, $1\frac{1}{12}$, $\frac{6}{12}$. Female, 13, ..., $9\frac{1}{2}$.

Three individuals described by Mr Yarrell as having been obtained, in May 1830, at Horning in Norfolk, a female in Holkham Park; and, in 1832, another individual in the same county. Two obtained in Yorkshire, one in the county of Durham, and two more, one of which was kept for some time in the Menagerie of the Zoological Society, the other obtained near Devonport, are all that have been recorded. One also

has been killed in Ireland. It is said to be common in Russia, Poland, Austria, Tyrol, Switzerland, and the districts on the northern side of the Appenines.

Red-legged or Red-footed Falcon. Orange-legged Hobby.

Falco vespertinus, Linn. Syst. Nat. i. 129.—Falco rufipes, Temm. Man. d'Ornith. i. 33.—Falco vespertinus, Orange-legged Falcon, MacGillivray, Brit. Birds, iii. 313.

14. Falco Æsalon. Merlin Falcon.

The wings when closed about an inch and a half shorter than the tail, the inner webs of the first and second quills abruptly cut out toward the end. Male with the upper parts deep greyish-blue, each feather with a black central line, the tail barred with black, the lower parts light reddish-yellow, with oblong blackish-brown spots. Female with the upper parts greyish-brown, the shaft-lines darker, the tail barred with pale reddish, the lower parts yellowish-white, with large longitudinal markings. Young with the upper parts brown, spotted with pale red, the lower reddish-white, marked as in the female.

Male, 11, 26, $8\frac{1}{2}$, $\frac{9}{12}$, $1\frac{6}{12}$, $1\frac{}{12}$, $\frac{6}{12}$. Female, $12\frac{1}{2}$, 29.

This, the smallest British species of the genus, is by no means uncommon in many parts of Scotland, where it remains all the year. It is also not unfrequent in the north of England, but in the middle and southern districts of that country occurs only in winter. It preys on small birds, such as larks, chaffinches, sandpipers, snipes, and plovers. Its nest, rudely constructed, is placed on the ground among heath. The eggs, three or four, are very similar to those of the kestrel, being broadly elliptical, about $1\frac{7}{12}$ inch in length, $1\frac{2}{12}$ in breadth, light red, or reddish-white, confusedly dotted, spotted, or blotched with dull red.

Stone Falcon. Rock Hawk. Sparrow Hawk.

Falco Litho-falco and Æsalon, Lath. Ind. Ornith. i. 47.—Falco Æsalon, Temm. Man. d'Ornith. i. 27 ; iii. 13.—Falco Æsalon, Merlin Falcon, MacGillivray, Brit. Birds, iii. 317.

15. Falco Tinnunculus. Kestrel.

The wings when closed about two inches shorter than the tail. Male with the head, hind-neck, rump, and tail, light greyish-blue, the latter with a broad subterminal black bar ; the back and wing-coverts pale red, with oblong or triangular dark spots ; the lower parts light yellowish-red, with longitudinal linear and guttiform spots. Female with all the upper

parts light red, with transverse spots of dark brown, the lower parts paler, with oblong dark markings. Young similar to the female, but with the spots larger.

Male, $13\frac{1}{2}$, 28, $9\frac{3}{4}$, $\frac{9}{12}$, $1\frac{1}{2}$, 1, $\frac{7}{12}$. Female, $14\frac{1}{2}$, 30.

The Kestrel is generally distributed, and in most districts not uncommon, so that it appears to be the most numerous of our rapacious birds. It is especially remarkable for its habit of hovering over the fields when searching for its prey, which consists chiefly of mice, arvicolæ, and shrews, in looking for which among the grass it balances itself, with a quivering motion of the wings, at the height of twenty or thirty feet. It occasionally destroys birds also, especially young larks, thrushes, and lapwings, and feeds on beetles and other Coleoptera, as well as earth-worms and lizards. At the commencement of the breeding season it is remarkably vociferous. It often takes possession of the deserted nest of a crow or magpie, but in rocky tracts breeds on cliffs or craggy banks. The eggs, which vary from three to five, are broadly elliptical or roundish, pale orange-red, or reddish-white, confusedly dotted or patched all over with dull brownish-red, and average $1\frac{2}{3}$ inch in length, $1\frac{1}{4}$ in breadth.

Kestril, Kastril, Kistril. Windhover. Stonegall, Steingall, Stannel. Keelie. Sparrow Hawk.

Falco Tinnunculus, Linn. Syst. Nat. i. 127.—Falco Tinnunculus, Temm. Man. d'Ornith. i. 29.—Falco Tinnunculus, Kestrel, MacGillivray, Brit. Birds, iii. 325.

GENUS X. ACCIPITER. HAWK.

Bill short, stout, compressed toward the end; upper mandible with the dorsal line decurved from the base, the sides sloping and somewhat convex, the edges with a prominent broad lobe beyond the middle, the tip decurved, trigonal, acute; lower mandible with the angle wide and rounded, the dorsal line convex, the edges inflected, the tip obliquely truncate and rounded. Mouth rather wide; tongue short, fleshy, concave above, rounded and slightly emarginate; œsophagus wide, dilated into a large crop; stomach roundish or oblong, its muscular coat very thin, the inner smooth and soft; intestine rather short and of moderate width; cœca very small; cloaca globular. Nostrils elliptical, oblique. Eyes rather large, with the superciliary ridge prominent. Aperture of the ear roundish, rather large. Head of mode-

rate size, roundish; neck short or of moderate length; body very slender behind. Feet of moderate length; tarsi moderate, or rather long, slender, feathered for at least a third, broadly scutellate before and behind; toes slender, scutellate above, with a large fleshy knob beneath on the last joint of each, and one at the next joint of the outer two; the first and second nearly equal; the third much longer, and connected with the fourth by a basal web; claws long, well curved, compressed, tapering to a fine point. Plumage compact above, blended beneath; wings of moderate length, very broad, much rounded, the fourth and fifth quills longest; tail long, even or rounded, much exceeding the wings.

The Hawks are distinguished by their elegant, generally slender form, the prominent lobe on the edges of the upper mandible, their comparatively short rounded wings, lengthened tail, and slender tarsi and toes. They fly low when searching for food, dart upon their prey on the ground, or in the air, or perched on trees or bushes. They nestle in trees, or on rocks, sometimes appropriate the nest of another bird, and lay from three to five large, roundish, spotted eggs.

16. Accipiter Palumbarius. Goshawk.

Male about twenty inches long, with the upper parts dark bluish-grey, the crown of the head and a broad band on its sides black, the lower white, transversely barred with blackish-grey, and marked with longitudinal shaft-lines. Female about twenty-five inches long, with the colouring similar, but the upper parts greyish-brown. Young brown above, the feathers edged with reddish-white, the head brown, the nape yellowish-white, streaked with dark brown; the lower parts yellowish-white, with longitudinal oblong dusky spots.

Male, 20, 43, 13, $1\frac{1}{2}$, 3, $1\frac{19}{32}$, 1. Female, 26, 45.

Extremely rare in Britain. Its habits have not been accurately observed with us. According to M. Temminck, it is essentially a northern bird, which migrates southward in winter, few remaining to breed in the central parts of Europe. It was much esteemed when the art of falconry was practised, and was flown at hares and the larger birds.

Falco palumbarius, Linn. Syst. Nat. i. 130.—Falco palumbarius, Temm. Man. d'Ornith. i. 55; iii. 27. — Accipiter palumbarius, MacGillivray, Brit. Birds, iii. 350.

17. Accipiter Nisus. Sparrow Hawk.

Male about twelve inches long, with the upper parts dark bluish-grey, the lower reddish-white, transversely barred with yellowish-red. Female about fifteen inches long, with the upper parts greyish-brown, the lower greyish-white, transversely barred with dark grey. Young brown above, the feathers margined with light red, the markings on the lower parts more dusky, and the last band on each feather somewhat cordate or pointed, the female more tinged with red. In all stages, six dusky bands on the lateral, and four on the middle tail-feathers.

Male, 13, 23, 8, $\frac{9}{12}$, $2\frac{1}{4}$, $1\frac{4}{12}$, $\frac{6}{12}$. Female, $15\frac{1}{2}$, $28\frac{1}{2}$.

This species is of a much more slender form than the Goshawk, for which reason it has been referred by some to a separate genus. The male and the female differ extremely in size. In spirit, activity, dexterity, and daring, it has no superior. When searching for food it flies low, pounces suddenly upon its prey, or follows it at full speed, even amidst the branches. Besides larks, thrushes, sparrows, and other small birds, it preys upon partridges and pigeons. It is generally distributed in Britain and Ireland, and appears to be by far the most numerous species of this family. It sometimes builds in rocks, more frequently in trees, and often takes possession of the deserted nest of a crow. The eggs, from three to five, are roundish-elliptical, bluish-white, blotched and irregularly spotted, sometimes sparingly, sometimes profusely, with umber-brown of various shades; their length an inch and seven-twelfths, their breadth an inch and a quarter.

Falco Nisus, Linn. Syst. Nat. i. 131.—Falco Nisus, Temm. Man. d'Ornith. i. 56; iii. 28.—Accipiter Nisus, Sparrow-Hawk, MacGillivray, Brit. Birds, iii. 340.

GENUS XI. CIRCUS. HARRIER.

Bill short, compressed and attenuated toward the end; upper mandible with the dorsal line declinate and nearly straight as far as the edge of the cere, then decurved in about the fourth of a circle, the sides moderately convex, the edges with a broad festoon, the dip deflected, subtrigonal, acute; lower mandible with the angle medial, wide and rounded, the dorsal line somewhat convex, the sides rounded, the edges involute, the tip obliquely truncate. Mouth wide; tongue short, fleshy, concave above, with its tip rounded and

slightly emarginate; œsophagus very wide, with an extremely large crop; proventriculus much dilated; stomach very large, round, with its muscular coat very thin; pylorus without valves; intestine of moderate length and width; cœca very small; cloaca very large and globular. Nostrils large, ovato-oblong. Eyes large, the lachrymal ridge not projecting. Aperture of ear very large, elliptical, with a bare space extending from it to the base of the lower jaw. Feet long; tarsus slender, compressed, anteriorly and posteriorly scutellate; toes rather small, slender, scutellate above, unless at the base, the third and fourth connected by a rather large basal web; the first stouter but considerably shorter than the second; claws long, moderately curved, slender, compressed, tapering to a fine point; those of the first and second toes much larger. Plumage very soft and generally blended; feathers oblong; a distinct ruff of narrow curved feathers from behind the eyes to the throat; wings long, broad, much rounded, the fourth and third quills longest, the first about equal to the seventh, the outer four with the inner web sinuously cut out. Tail long, nearly even, or rounded.

There is considerable affinity in this genus to the owls, more especially in the ruff, large aperture of the ear, and downy plumage. The Harriers fly low, often in circles, pounce upon small quadrupeds, birds, and reptiles, or sometimes pursue birds in open flight, and feed occasionally on insects and fishes. They nestle on the ground. The female generally differs from the male in colour. Three species occur in Britain.

18. Circus cyaneus. Ring-Tailed Harrier.

The wings extending to about two inches from the tip of the tail; the fourth quill longest, the third almost equal. Male with the plumage light bluish-grey, the outer primaries black toward the end, the tail-coverts white. Female umber-brown above, pale reddish-yellow longitudinally streaked with brown beneath, tail-coverts white. Young similar to the female, with the tints richer.

Male, $18\frac{1}{4}$, $39\frac{1}{2}$, 13, $1\frac{1}{12}$, $2\frac{8}{12}$, $1\frac{3}{12}$, $\frac{8}{12}$. Female, 21, 46.

This species feeds on small birds, and the young of larger, but occasionally on grouse and partridges, often on young

hares, rabbits, mice, frogs, lizards, serpents, and insects. It flies with considerable rapidity, but buoyantly. Although nowhere very common, it is generally dispersed. It nestles on the ground, laying from three to five eggs, which are broadly elliptical, of a bluish-white colour, an inch and three-fourths in length, an inch and a third in breadth. Of the young, which resemble the female, the male assumes the adult plumage at the first moult in its second autumn.

Common Harrier. Hen Harrier. Blue Hawk. Blue Kite. Brown Kite. Blue or Brown Glede.

Falco cyaneus and pygargus, Linn. Syst. Nat. i. 126. Male and Female.—Falco cyaneus, Temm. Man. d'Ornith. i. 72.—Circus cyaneus, Ring-tailed Harrier, MacGillivray, Brit. Birds, iii. 366.

19. Circus cineraceus. Montagu's Harrier.

The wings extending a little beyond the tail; the third quill much longer than the fourth. Male with the plumage light bluish-grey, the outer primaries black toward the end, the tail-coverts white. Female umber-brown above, pale reddish-yellow, with longitudinal bright red streaks beneath, tail-coverts white. Young similar to the female, but having the lower parts of a uniform bright red.

Male, 17, .., 15, 1, $2\frac{2}{12}$, $1\frac{2}{12}$, $1\frac{7}{12}$. Female, 19, ..., $15\frac{1}{2}$.

This species, which is said to occur on the continent from Poland southward, has been found in most of the southern and eastern counties of England, but has not hitherto been observed beyond Northumberland. Its habits are similar to those of the common species; its eggs of the same colour, but smaller.

Ash-coloured Harrier or Falcon.

Falco cineraceus, Mont. Ornith. Dict.—Falco cineraceus. Temm. Man. d'Ornith. i.—Circus cineraceus, Montagu's Harrier, MacGillivray, Brit. Birds, iii. 378.

20. Circus æruginosus. Marsh Harrier.

Adult umber-brown tinged with grey above, deep reddish-brown beneath, the head, part of the neck, and the shoulders, yellowish-white. In very old individuals, the primary quills and tail-feathers ash-grey. Young deep chocolate, the wing-coverts tipped with brownish-red, the quills and tail-feathers with reddish-white. After the first moult, more or less pale reddish or yellowish-white on the head and neck. Individuals differ considerably in colour. Old birds having

the secondary quills and tail ash-grey have not hitherto been observed in Britain.

Male, $21\frac{1}{2}$, .., $16\frac{9}{12}$, $1\frac{5}{12}$, $3\frac{5}{12}$, $1\frac{9}{12}$, 1. Female, 24, 52.

Very rare in Scotland, but not uncommon in some parts of England. According to Montagu the nest is most frequently made on the ground, but sometimes in the fork of a large tree; the eggs white. The ruff is less conspicuous in this species, for which reason some have instituted a distinct genus for its reception. It flies low, and feeds on waterfowl, especially young ducks, water-rats, frogs, lizards, fish, and insects.

Moor Harrier. Moor Buzzard. Harpy. Duck Hawk.

Falco æruginosus, Linn. Syst. Nat. i. 130.—Falco rufus, Temm. Man. d'Ornith. i. 69. — Circus æruginosus, Marsh Harrier, MacGillivray, Brit. Birds, iii. 382.

FAMILY III. STRIGINÆ. STRIGINE BIRDS, OR OWLS.

The Striginæ, which are separated from the Falconinæ by a rather wide interval, are distinguished by their extremely large head, and especially the direction of their generally enormous eyes, which, in place of being lateral, are either anterior, or oblique. Bill short, generally stout, cerate, wide at the base, compressed toward the end; upper mandible with its dorsal line declinate and decurved, its edges destitute of prominent lobe, the tip prolonged, decurved, acute; lower mandible with the angle wide; the edges decurved with a shallow sinus close to the rounded tip. Tongue small, fleshy, deeply emarginate, and papillate at the base, channelled above, horny beneath, with the tip narrowed and emarginate or bifid; œsophagus very wide, of nearly equal diameter throughout, being destitute of crop; proventriculus wide; stomach large, roundish, with the muscular coat very thin, and composed of a single series of fasciculi, the epithelium soft or somewhat hard, smooth or rugous; intestine short; cœca large, oblong, narrowed at the base; cloaca large and globular. Trachea short, wide, of thin and slender rings; inferior larynx with a single pair of muscles,

and the last entire ring partitioned. Eyes extremely large, directed forwards, immobile; upper eyelid very large. Nostrils rather large or of moderate size, varying in figure. Apertures of ears very large, often furnished with elevated dermal margins or opercula, constituting a kind of concha. Legs muscular; tarsus covered with feathers, which are sometimes however destitute of filaments; toes four, the outer next in length to the first and capable of being directed backwards, the anterior somewhat webbed at the base, all with a few scutella at the end; claws long, curved, tapering to a fine point. Plumage very full, remarkably soft; down very soft and copious; feathers of the face arranged so as to form two disks surrounding the eyes; a ruff of narrow recurved feathers; wings always broad; the filaments of the outermost quill generally separated at the end and recurved; tail generally short, always of twelve more or less arched feathers.

Species of Striginæ occur in all climates. Some, which approach the Falconinæ in form and habits, seek their prey by day, but the greater number are nocturnal, and unable to see in the full light of the sun. They feed on quadrupeds, birds, and insects, sometimes on fishes, and other animals. The hair, feathers, scales, elytra, and bones, are disgorged in pellets. Their flight is buoyant, and, owing to the peculiar softness of their plumage, causes little or no sound. They nestle on the ground, in hollow trees, rocks, and buildings, laying from two to five roundish white eggs. The young, at first covered with light-coloured down, remain till fully fledged. Nine species rank as British, but only four are general and resident.

GENUS XII. SYRNIA. DAY-OWL.

Bill very short, strong, with its upper outline decurved from the base, the lower convex, the tip trigonal, decurved,

acute. Mouth very wide; tongue short, deeply sagittate and papillate at the base, nearly flat above, with the sides parallel, the tip narrow and slightly emarginate; œsophagus wide, without dilatation; stomach large, roundish, its muscular coat very thin, the epithelium thick, moderately tough, and rugous; pylorus with two prominences; intestine of moderate length, rather wide; cœca large, oblong, narrowed at the base; cloaca globular, very large. Nostrils ovate, oblique, with the cere tumid behind them. Eyes very large. Conch simple, elliptical, less than half the height of the head; which is very large, broad, and rounded; neck short; body of moderate size. Legs rather short, stout; tarsus short, feathered; toes short, feathered; but with the filaments wanting in some species, all with two scutella at the end; claws long, well curved, compressed, very acute. Plumage very full and soft; facial disks incomplete above the eyes; ruff incomplete and inconspicuous; feathers oblong, rounded; wings large, broad, rounded; the first four quills sinuate on both webs; tail broad, rounded, rather long.

These birds pursue their prey chiefly by day, and inhabit open districts. They are for the most part confined to the Arctic regions during the warmer season, and at the approach of winter advance a little southward. Their food consists of quadrupeds, birds, fishes, and insects. Of the two species which have been met with in Britain, neither is permanently resident. Another has been once procured at some distance from the coast.

21. Syrnia funerea. Hawk Day-Owl.

Tail rather long and much rounded; toes covered with shaggy feathers; upper parts brownish-black, or chocolate-brown, spotted and barred with white; lower parts white, narrowly barred with dusky; quills with transverse elliptical white spots, tail with about eight bands of narrower spots; bill yellowish-white, claws dusky.

Male, 15, ..., $9\frac{3}{4}$, $1\frac{3}{12}$, 1, $\frac{12}{12}$, $\frac{12}{12}$. Female, 17, ..., 10.

Inhabits the northern parts of both continents. An individual was captured, in March 1830, off the southern coast of England, and described, in 1835, by Mr Thompson of Belfast.

Hawk Owl. Hudson's Bay Owl.

Strix funerea, Gmel. Syst. Nat. i. 294.—Strix funerea,

Man. d'Ornith. i. 86.—Syrnia funerea, Hawk Day-Owl, MacGillivray, Brit. Birds, iii. 404.

22. Syrnia Nyctea. Snowy Day-Owl.

Tail rather long, moderately rounded; toes covered with shaggy feathers; plumage white, the head and back spotted, the wings, tail, and lower parts barred with dusky-brown. Young with large dark markings.

Male, 23, 56, $17\frac{1}{4}$, $1\frac{9}{12}$, $2\frac{2}{12}$, $1\frac{7}{12}$, $1\frac{8}{12}$. Female, 26, 65.

Some individuals are almost entirely white, while others have the markings large. It appears to be resident in Shetland, and has been obtained in Orkney, on the mainland of Scotland, and as far south as Yorkshire. It has also several times been procured in Ireland. It was first described as British by Mr Bullock, but had previously been found in Shetland by Dr Lawrence Edmondston, who published, in 1822, a detailed account of its habits.

Snowy Owl. Harfang. Kat-yogle.

Strix nyctea, Linn. Syst. Nat. i. 132.—Strix nyctea, Temm. Man. d'Ornith. i. 82.—Syrnia nyctea, Snowy Day-Owl, MacGillivray, Brit. Birds, iii. 407.

23. Syrnia psilodactyla. Bare-toed Day-Owl.

Toes covered with shaft-bristles, between which the scales are apparent; upper parts brown, the head with linear oblong, the neck, back, and wings with roundish, the tail with four bands of transverse, white spots; lower parts yellowish-white, with longitudinal brown spots.

Male, $10\frac{1}{2}$, ..., $6\frac{1}{4}$, $\frac{10}{12}$, $1\frac{1}{4}$, $\frac{11}{12}$, $\frac{6\frac{1}{2}}{12}$.

Of very rare occurrence in Britain, and hitherto not found in Scotland. It is said to be common on the Continent, but not to extend northward beyond lat. 55°. This species is distinguished from the only other one that resembles it, by having the toes covered with bristles instead of feathers.

Little Owl. Passerine Owl.

Strix passerina, Temm. Man. d'Ornith. i. 92; iii. 49.—Noctua nudipes, Gould. Birds of Eur.—Syrnia psilodactyla, Bare-toed Day-Owl, MacGillivray, Brit. Birds, iii. 417.

GENUS XIII. SCOPS. OWLET.

This genus is composed of several small owls, agreeing with Syrnia and Bubo, in having the conch simple, but differing from the former in having elongated tufts on the head,

and from the latter in having the wings longer, the tarsi more slender, and the toes more or less bare. Bill short, stout, with its upper outline decurved from the base, the lower convex, the tip prolonged, decurved, acute. Nostrils roundish. Eyes very large. Conch elliptical, simple, about a third of the height of the head, the latter very large, roundish; neck short; body slender. Legs rather short; tarsi slender, feathered; toes short, bare, reticulate, at the end scutellate; claws long, slightly curved, compressed, tapering, acute. Plumage full, soft; two elongated tufts on the head; facial disks incomplete above the eyes; ruff inconspicuous and incomplete; feathers generally ovato-oblong; wings long, with the third quill longest; tail short, slightly rounded.

24. Scops Aldrovandi. Aldrovandine Owlet.

Head with tufts of about twelve feathers; plumage light grey variegated with brown, and marked with longitudinal brownish-black lines and transverse undulations; a large whitish spot on the outer scapulars; primary quills with conspicuous white spots between the brown bands on the outer web.

Male, $7\frac{1}{2}$, ..., $6\frac{1}{4}$, $\frac{9}{12}$, 1, $\frac{9}{12}$, $\frac{4\frac{1}{2}}{12}$.

Of very rare occurrence in England, and supposed to be there merely migratory. Said to be common in the southern parts of the continent, and to occur in Africa as well as Asia.

Scops Eared Owl. Little Horned Owl.

Strix Scops, Linn. Syst. Nat. i. 129.—Strix Scops, Temm. Man. d'Ornith, i. 103.—Scops Aldrovandi, Aldrovandine Owlet, MacGillivray, Brit. Birds, iii. 422.

GENUS XIV. BUBO. EAGLE-OWL.

Bill short, robust, compressed toward the end; upper mandible with its outline decurved from the base, the tip subtrigonal, decurved, acute; lower mandible with the angle wide, the dorsal line short and slightly convex, the edges decurved at the end, with a sinus close to the abrupt tip. Mouth very wide; tongue short, oblong, sagittate and papillate at the base, its tip rounded and retuse; œsophagus very wide, without crop; proventriculus dilated below; stomach large, roundish, very thin, its inner surface smooth and soft;

pylorus without valvular prominences ; intestine of moderate length, rather wide ; cœca large, oblong, narrowed at the base ; cloaca very large, globular. Nostrils roundish-elliptical. Eyes extremely large, fixed, oblique. Conch simple, elliptical, from a third to half the height of the skull. Head very large, broad ; neck short ; body stout, much narrowed behind. Legs rather short, strong ; tarsus short, closely feathered ; toes short, strong, feathered, with two terminal scutella ; claws long, well curved, tapering, very acute. Plumage soft and very full ; facial disks incomplete ; ruff incomplete and inconspicuous ; wings long, very broad, much rounded, third quill longest ; outer three quills sinuate on the inner web ; tail of moderate length, broad, rounded.

The birds of this genus are among the largest of the family. They prey on quadrupeds and birds, are not entirely nocturnal, reside in wooded regions, and nestle on rocks, trees, or the ground.

25. Bubo maximus. Great Eagle Owl.

Tufts of about eighteen feathers, projecting more than two inches beyond the plumage of the head ; upper parts variegated with dark brown and light reddish-yellow ; lower parts of the latter colour, with longitudinal blackish-brown spots and streaks, and numerous transverse undulating lines ; facial disks greyish-brown, obscurely barred ; throat with a patch of white ; bill and claws greyish-blue at the base, black toward the end.

Male, 24, 58, 19, $2\frac{1}{2}$, $2\frac{6}{12}$, $2\frac{5}{12}$, $1\frac{8}{12}$. Female, 26, 61.

Generally distributed in the wilder parts of Europe. Individuals have been obtained in several districts of England ; but it does not now breed in any part of Britain.

Great-Horned Owl. Great-Eared Owl. Great Owl.

Strix Bubo, Linn. Syst. Nat. i. 131.—Strix Bubo, Temm. Man. d'Ornith, i. 100.—Bubo maximus, Great Eagle-Owl, MacGillivray, Brit. Birds, iii. 428.

GENUS XV. ULULA. HOOTING-OWL.

Bill short, strong, compressed toward the end ; upper mandible with the dorsal line decurved from the base, the tip trigonal, decurved, acute ; lower mandible with the angle wide, the dorsal line convex, the edges with a sinus close to

the abruptly rounded tip. Mouth very wide; tongue short, narrow, deeply sagittate and papillate at the base, covered above with minute papillæ, the sides nearly parallel, the tip rounded and emarginate; œsophagus wide, without crop; stomach very large, roundish, very thin, its inner surface soft and slightly rugous; pylorus with a semicircular flap; intestine of moderate length, rather wide; cœca large, oblong, narrowed at the base; cloaca globular, very large. Nostrils roundish, with the cere tumid behind. Eyes very large, oblique, slightly mobile. Conch somewhat elliptical, extending from the level of the upper part of the eye to the base of the lower jaw, and having an anterior semicircular operculum. Head extremely large, broad, rounded; neck short; body short, much compressed behind. Legs of moderate length, stout; tarsus short, feathered; toes short, feathered, all with two scutella at the end; claws long, well curved, tapering, compressed, very acute. Plumage very full and soft; facial disks very large, complete; ruff complete and conspicuous; wings long, very broad, much rounded; the first five quills abruptly cut out on the inner edge, the fourth longest, the first and tenth about equal; tail broad, rounded.

These birds reside chiefly in wooded districts, are strictly nocturnal, and prey on small quadrupeds, birds, insects, and occasionally fishes.

26. Ulula Aluco. Tawny Hooting Owl.

Upper parts brownish-red, more or less tinged with grey, marked with longitudinal dark brown streaks, and transverse lines of a lighter tint; the lower parts reddish-white, or yellowish, with longitudinal linear-lanceolate and transverse undulated dark brown markings; large white spots on some of the scapulars and wing-coverts; bill greyish-yellow; iris bluish-black. Young birds more tinged with red, old birds more grey.

Male, 14, 31, 10½, 1 $\frac{5}{12}$, 1 $\frac{9}{12}$, 1 $\frac{8}{12}$, $\frac{7}{12}$. Female, 16, 34.

This, next to the Mottled Tufted Owl, and Barn Owl, is the most common species in Britain, where it is generally dispersed in the wooded districts. At night it emits a loud and doleful cry, termed hooting, besides which it occasionally utters a harsh scream. Its food consists of young hares, rats, mice, moles, birds of various species, beetles, and other in-

sects, occasionally fish. Nestles in decayed trees, or on the ground, laying three or four pure white eggs, an inch and eleven-twelfths long, an inch and a half in breadth.

Brown Owl. Tawny Owl. Grey Owl. Ivy Owl. Beech Owl. Howlet. Jenny Howlet. Screech Owl.

Strix Aluco and Stridula, Linn. Syst. Nat. 132, 133.—Strix Aluco, Temm. Man. d'Orn. i. 89.—Ulula Aluco, Tawny Owl, MacGillivray, Brit. Birds, iii. 438.

27. Ulula Tengmalmi. Tengmalm's Hooting-Owl.

Upper parts chocolate-brown, spotted with white; tail with five rows of transversely elongated spots; lower parts yellowish-white, with longitudinal brown markings; tarsi and toes covered with downy feathers; length about ten inches.

Male, $10\frac{1}{2}$, . . , $6\frac{10}{12}$, 1, $\frac{10}{12}$, $\frac{9}{12}$, $\frac{8}{12}$. Female, $11\frac{1}{2}$, ..., $7\frac{1}{2}$.

This species is said to inhabit the northern parts of Europe, and to extend in diminished numbers as far south as France, Switzerland, and Italy. In North America, it occurs, according to Dr Richardson, from Great Slave Lake to the United States. In England, a very few individuals have been met with.

Strix Tengmalmi, Gmel. Syst. Nat. i. 291.—Strix Tengmalmi, Temm. Man. d'Ornith. i. 94.—Ulula Tengmalmi, Tengmalm's Hooting Owl, MacGillivray, Brit. Birds, iii. 445.

GENUS XVI. ASIO. TUFTED-OWL.

Although the species of the genus Bubo are furnished with tufts on the head, those of the present species are easily distinguished from them by the enormous size of their auditory concha, and other peculiarities. Bill short, moderately stout, compressed toward the end; upper mandible with the dorsal line decurved from the base, the tip acute, descending obliquely; lower mandible with the angle wide, the edges with a slight sinus, close to the obliquely truncate tip. Mouth very wide; tongue short, narrow, oblong, deeply emarginate and papillate at the base, its tip thin, narrow, emarginate; œsophagus very wide, without crop; stomach large, roundish, very thin, with a soft and somewhat rugous epithelium; pylorus with a thin margin; intestine of moderate length and width; cœca of considerable length, oblong, contracted toward the base; cloaca globular, very large. Nostrils large, oblong, oblique. Eyes very large, oblique. Conch extremely

large, extending from over the middle of the eye to the base of the lower mandible, and of a semilunar form, with an anterior semicircular flap in its whole length, and a broad membranous margin behind. Head very large, short; neck short; body short, much compressed behind. Legs short, moderately stout; tarsus short, and with the toes covered with somewhat silky feathers; toes short, with two terminal scutella; claws long, moderately curved, slender, compressed, extremely acute. Plumage full, extremely soft; facial disks very large, complete; ruff complete; a tuft of elongated feathers on each side over the eye; wings very long, broad, rather pointed; the second quill longest, the first and fourth about equal, the outer only having a slight sinus in the inner web close to the tip; tail rather short, a little rounded.

The species of this genus are less robust than those belonging to Bubo. They are nocturnal, and incapable of seeking their prey by day. Both our species occur also in North America.

28. Asio Otus. Mottled Tufted-Owl.

Tufts conspicuous, projecting an inch and a half beyond the plumage of the head; upper parts light reddish-yellow, longitudinally streaked, transversely barred, and finely undulated with brown and greyish-white; lower parts light reddish-yellow, with oblong brown streaks, and faintly undulated; facial disks whitish in their anterior half, pale yellowish-brown behind, the eye half surrounded by dark brown. Young with the facial disks yellowish-brown, and the dark markings on the lower parts broader.

Male, 14½, 36, 11½, 1 $\frac{5}{12}$, 1½, 1¼, $\frac{9}{12}$. Female, 16, 40.

A constant resident, occurring in the wooded parts of both England and Scotland, it being, next to the Barn Owl, our most common species. It is strictly nocturnal; feeds on small glires, moles, birds, and insects; reposes by day in thick woods; generally appropriates the deserted nest of a crow or other bird, and lays from three to five eggs, which are pure white, an inch and nine-twelfths long, an inch and four-twelfths in breadth. The young, at first covered with light grey down, faintly barred with brown, are generally abroad in June.

Long-eared Owl. Common-eared Owl. Horned Owl.

Strix Otus, Linn. Syst. Nat. i. 132.—Strix Otus, Temm.

Man. d'Ornith. i. 102.—Asio Otus, Mottled Tufted-Owl, MacGillivray, Brit. Birds, iii. 453.

29. Asio brachyotus. Streaked Tufted-Owl.

Tufts inconspicuous, projecting about half an inch beyond the plumage of the head; upper parts light reddish-yellow, with broad longitudinal streaks and transverse bars of deep brown; lower parts light reddish-yellow, with narrow longitudinal brown streaks; facial disk whitish in its anterior half, pale yellowish-brown behind, the eye completely surrounded with brownish-black; middle tail-feathers with a brown central patch in each of the light-coloured spaces between the dark bands. Young similar to the adult.

Male, 15, 38, 11¾, 1 3/12, 1 7/12, 1 3/12, 9/12. Female, 16, 40.

Individuals are permanently resident, and others immigrant from the north in October. In winter it is dispersed over Scotland and England, and is frequently found in turnip fields, or by the sides of hedges or brooks. Mr Hoy found it breeding in Norfolk, and Sir William Jardine in Dumfriesshire. The nest is placed on the ground, and the eggs, which are pure white, are generally five. It feeds on small quadrupeds and birds, and appears not to be altogether nocturnal.

Short-eared Owl. Hawk Owl. Woodcock Owl. Mouse-hawk.

Strix Ulula and brachyotus, Lath. Ind. Ornith. i. 60, 55.—Strix brachyotus, Temm. Man. d'Ornith. i. 99.—Asio brachyotus, Streaked Tufted-Owl, MacGillivray, Brit. Birds, iii. 461.

GENUS XVII. STRIX. SCREECH-OWL.

Bill rather short, moderately stout, compressed toward the end; upper mandible with the dorsal line straight to the edge of the cere, the tip decurved, acute; lower mandible with the angle long, the dorsal line short and somewhat convex, the edges with a small sinus close to the rounded tip; the gape-line slightly sinuous. Mouth very wide; tongue narrow, sagittate and papillate at the base, the sides nearly parallel, the tip thin, bifid with two pointed lobes; œsophagus very wide, of uniform diameter; stomach very large, roundish, its muscular coat very thin, the inner smooth and even; pylorus marginate, or having one triangular prominence; intestine of moderate length, narrow; cœca long, narrow at the base, oblong toward the end; cloaca extremely

large and globular. Nostrils large, ovate, oblique. Eyes very large, slightly mobile, oblique. Conch extremely large, semicircular, extending from over the anterior angle of the eye to the middle of the lower jaw, with an anterior erect, semicircular, subtruncate operculum. Head extremely large, broad behind, somewhat trigonal; neck short; body slender; legs rather long, of moderate strength; tarsi covered with small downy feathers; toes short, covered above with small scales, together with adpressed shaft-bristles, and two or three terminal scutella; claws long, moderately curved, tapering, extremely acute, that of the third toe with its inner dilated edge serrate. Plumage very full, soft, and downy; facial disks very large and complete; ruff perfect and conspicuous; wings long, very broad; the second quill longest, the first and third slightly shorter; all the quills with their margins direct; tail short, even, rather weak.

The Screech-Owls have an extremely buoyant and silent flight. They are nocturnal, but are able to find their way by day. Their food consists chiefly of small glires, insects, and occasionally young birds. They nestle in buildings, rocks, and other high places, as well as on the ground, and lay two or three elliptical or oval white eggs. Species occur on both continents, as well as in New Holland.

30. Strix flammea. European Screech-Owl.

Operculum margined with linear-oblong feathers; bill yellowish-white; claws dark purplish-grey; upper parts light reddish-yellow, variegated with minutely mottled ash-grey, and small black and white spots; facial disks and lower parts white, the latter with very small dusky spots. Young similar to the adult, but with the upper parts darker.

Male, 14, 35, 11¼, 1½, 2$\frac{5}{12}$, 1$\frac{4}{12}$, $\frac{8}{12}$. Female, 15, 28.

This species is more extensively distributed, and more numerous in Britain, than any other of its family; but it is very seldom met with in the wilder and bleaker districts, its favourite haunts being in the cultivated and sheltered parts of the country, where meadows and corn-fields foster the animals on which it habitually preys. Ruined buildings and hollow trees are its usual places of abode, and there it deposits its eggs, from two to five in number, an inch and a half in length, an inch and a quarter in breadth, pure white, and smooth. The young are at first covered with white down.

Several broods are produced annually. It feeds chiefly on mice. Its cry is a harsh shriek, and, like the other species, it hisses when irritated or alarmed.

Barn Owl. Church Owl. Screech Owl. White Owl. Gillihowter. Howlet.

Strix flammea, Linn. Syst. Nat. i. 133.—Strix flammea, Temm. Man. d'Ornith. i. 91 ; iii. 48.—Strix flammea, European Screech-Owl, MacGillivray, Brit. Birds, iii. 473.

It will be very apparent to every person who has examined a considerable number of birds, and observed their habits, that each of the three groups above described forms a very natural family, and that these groups, on being put together, form a very natural order, which is well defined, and does not very obviously blend into any other, although indications of affinity to other groups are everywhere perceptible. Thus, some Owls are very evidently allied to some Goatsuckers, and some Hawks are related to Shrikes. Were we to predetermine a typical number, and assume it to be three, we might plausibly enough institute analogies, and discover a ternary disposition throughout. Thus, to constitute another order, the CYPSELINÆ or Swifts would represent the Vultures, the HIRUNDINÆ or Swallows might answer for the Hawks, and the CAPRIMULGINÆ or Goatsuckers for the Owls. It does, in fact, appear, that these three groups, although they differ considerably in the structure of the digestive organs and skeleton, form a natural enough order, to which I have elsewhere given the name of VOLITATORES or GLIDERS. Whether there be truth in this or not, these Volitatores may now occupy our attention as well as any other group. Although birds are both masculine and feminine, yet, as the Romans held their *Aves* to be of the latter gender, I shall, in deference to their better knowledge of their own language, modify the names which I have given to the larger groups, or orders. These Orders may be considered as analogous to the groups called Natural Families by Botanists, and the Families as corresponding to their Tribes.

ORDER II. VOLITATRICES. GLIDERS.

Birds of small or moderate size, having the body short, and proportionally light; the neck very short; the head roundish and depressed. Bill very short, of great breadth at the base, the mouth being extremely wide; upper mandible with its dorsal line straight until near the end, when it is decurved, the basal sinuses wide, the sides depressed, the edges arched and continuous, the tip very small and deflected; lower mandible with the angle wide, the dorsal line extremely short, and convex, the edges arched, the tip very small and pointed. Mouth capacious, generally wider than the head; tongue small, triangular; œsophagus wide, without crop; proventriculus with a belt of oblong glandules; stomach large and thin, or moderately muscular; intestine of moderate length and width; cœca none, or very small, but in the nocturnal species large and oblong. Nostrils small; eyes of moderate size or large; aperture of ear large. Feet extremely small; tarsus very short; toes four, short; claws curved, compressed, acute. Wings very long, generally narrow.

The Volitatrices have a peculiarly light and bounding flight, glide along with surprising speed, deviate on occasion as if without effort, and seem scarcely liable to fatigue on their aerial rambles, which are therefore extremely protracted. Owing to the very diminutive size of their feet, they are all incapable of walking efficiently, or of advancing to any distance on the ground or on trees. They feed on insects, which they seize in open flight, with the bill. Three distinct groups, the Cyp-

SELINÆ, HIRUNDINÆ, and CAPRIMULGINÆ, enter into this order.

FAMILY IV. CYPSELINÆ. CYPSELINE BIRDS, OR SWIFTS.

Body moderate; neck very short; head roundish, depressed. Bill extremely short, weak, opening to beneath the hind part of the eyes, compressed at the end; upper mandible with the dorsal line convex, the tip declinate; lower mandible much smaller, with the angle very large, the dorsal line slightly convex, the tip slender. Mouth very wide; palate nearly flat, covered with minute papillæ; tongue short, triangular, fleshy, sagittate and papillate at the base, with the tip obtuse, or somewhat bifid; œsophagus wide above, then of moderate breadth; stomach elliptical, its muscular coat of moderate thickness, epithelium dense, rugous; intestine extremely short, rather wide; no cœca; cloaca large, ovate. Trachea without inferior laryngeal muscles. Eyes large. Nostrils oblong, basal, approximate. Apertures of ears rather large. Feet extremely short; tarsus stoutish; four toes, all directed forwards, the outer three all nearly equal; claws rather large, stout, decurved, very acute. Plumage rather compact above, blended beneath; no bristles about the mouth; wings extremely elongated, falciform, the first or second quill longest. Tail of ten feathers, moderate or long, but much exceeded by the wings.

The Swifts are remarkable for the extreme rapidity of their flight and unwearied activity. They feed exclusively on insects, which they seize in open flight, and therefore migrate southward in autumn. They reside in holes and crevices of rocks and buildings, laying from two to five very elongated white eggs. Having no inferior laryngeal muscles, they are destitute of song, but utter a loud shrill scream.

GENUS XVIII. CYPSELUS. SWIFT.

Bill extremely short, depressed, broad at the base, narrowed at the end; upper mandible with its dorsal line convex, the edges sharp, and incurved, the nasal sinuses very large, the tip deflected; lower mandible much smaller, and slightly shorter, its angle very wide, the dorsal line very short and convex, the edges involute, the tip narrow but obtuse; gape-line from beneath the hind part of the eyes, arched. Upper mandible shallow, with a slightly prominent central line; palate flat; tongue short, sagittate and papillate at the base, bifid at the tip; œsophagus wide at the commencement, then rather narrow; proventriculus oblong; stomach elliptical, with the muscular coat rather thin, the cuticular lining thin, dense, longitudinally rugous; intestine very short, rather narrow; no cœca; cloaca oblong. Nostrils oblong, with an elevated margin. Eyes rather large. Aperture of ear large, roundish. Body rather full, elongated, flattened; neck very short; head broad. Feet extremely short, strong; tarsus extremely short, bare behind only; inner toe smallest and directed forwards, third longest; all the toes with two phalanges; claws large, strong, curved, tapering, very acute. Plumage soft, glossy; no bristles at the base of the bill; wings extremely long, narrow and pointed; the outer primaries a little incurved toward the end, the first and second longest; tail long, forked, of ten feathers, much exceeded by the wings.

Owing to the extreme shortness of their feet, the Swifts are unable to walk efficiently; but they cling with ease to a perpendicular surface. Their flight is extremely rapid. They nestle in holes in buildings, or in crevices of rocks, forming their nests of materials gathered on wing.

31. Cypselus Melba. White-bellied Swift.

All the upper parts, together with the sides and lower part of the neck, the sides of the body, legs, and lower wing and tail coverts, greyish-brown; the rest white; length to end of tail about nine inches.

Male, 9, 21, $9\frac{1}{12}$, $\frac{5}{12}$, $\frac{6}{12}$, $\frac{5}{12}$, $\frac{5}{12}$.

Only three specimens have been obtained in England, and

one in Ireland, this species not migrating regularly so far northward as Britain. Common in the south of Europe.

Alpine Swift.

Hirundo Melba, Linn. Syst. Nat. i. 345.—Cypselus alpinus, Temm. Man. d'Ornith. i. 433.—Cypselus Melba, White-bellied Swift, MacGillivray, Brit. Birds, iii. 611.

32. Cypselus murarius. Black Swift.

Blackish-brown, slightly glossed with green; throat greyish-white; length about seven and a half inches.

Male, $7\frac{1}{2}$, $16\frac{1}{4}$, 7, $\frac{1}{4}$, $\frac{5}{12}$ and $\frac{3}{4}$, $\frac{3}{12}$ and $\frac{1}{2}$, $\frac{3}{12}$ and $\frac{1}{2}$. Female, $7\frac{1}{12}$, $15\frac{1}{2}$.

Arrives in the beginning of May, and departs in the end of August. Generally dispersed in Britain and Ireland. Resorts to steeples, towers, ruinous castles, and abrupt rocks, where it nestles in holes or crevices. The nest is rudely constructed of straws, fibrous roots, moss, wool, hair, and feathers, agglutinated. The eggs, two or three, are pure white, of an elongated form, an inch in length, seven and a half-twelfths in breadth.

Black Martin. Swift. Screech. Develing.

Hirundo Apus, Linn. Syst. Nat. i. 344.—Cypselus murarius, Temm. Man. d'Ornith. i. 434.—Cypselus murarius, Black Swift, MacGillivray, Brit. Birds, iii. 614.

FAMILY V. HIRUNDINÆ. HIRUNDINE BIRDS, OR SWALLOWS.

Body moderately short, rather compressed; neck very short; head broad, depressed. Bill very short, much depressed, opening to beneath the fore part of the eye; upper mandible with the dorsal line slightly convex, the edges with a slight notch close to the slender tip; lower mandible with the angle very wide, the dorsal line nearly straight, the tip narrow, but rather obtuse; gape-line nearly straight. Palate flat; tongue short, triangular, sagittate and papillate at the base, with the tip bifid; œsophagus wide at the commencement, then narrow; stomach broadly elliptical, with the muscular coat thick, forming two moderate lateral muscles, the cuticular lining thin, dense, broadly rugous; intestine short, rather wide;

cœca very small; cloaca oblong. Trachea with four pairs of inferior laryngeal muscles. Nostrils small, linear-oblong. Eyes of moderate size. Aperture of ear rather large, elliptical. Feet extremely short, slender; tarsus bare or feathered, always with some scutella below; toes small, three before, one behind, bare and scutellate, or feathered, with the usual number of joints; claws rather long, moderately arched, compressed and laterally grooved, tapering to a very acute point. Plumage soft, blended; bristles about the mouth very small; wings extremely long, pointed, the outer two quills longest, and slightly incurved toward the end; tail of twelve feathers, even or forked. Trachea with four pairs of inferior muscles.

The Hirundinæ feed entirely on insects, which they capture on wing. They are therefore obliged to retire southward, in autumn, from the colder and temperate regions. Their flight is extremely rapid and buoyant; their ordinary cry a chirp, or twitter; but most of them have a modulated song. They nestle in holes, or against the face of rocks, buildings, or trees, forming their nest of mud, or of twigs held together by a glutinous substance, and laying four or five white eggs, which are either plain or spotted.

GENUS XIX. HIRUNDO. SWALLOW.

Bill very short, much depressed, of a triangular form; upper mandible with the dorsal line convexo-declinate, the edges slightly inflected, with a distinct notch, the tip slender, but blunt; lower mandible with the angle very large and wide. The characters of the digestive apparatus, organs of sense, and limbs, as above. Plumage soft, glossy on the upper parts; the feathers oblong; bristle-feathers at the base of the upper mandible scarcely apparent; wings extremely long, pointed, with the outer two quills longest; tail emarginate or forked.

As in the genus Buteo, one species has the tarsi bare, while they are feathered in another; so may it be with

Swallows; and as various degrees of emargination on the one hand, or of cuneation on the other, are observed in many genera, so may it be with Swallows. Wherefore, it is not expedient to consider every little modification of the tail, or of the covering of the feet, as indicative of a generic difference. Our three British Swallows are nearly enough allied to be placed in one genus. They all hunt in the same manner, but differ in their mode of nestling.

33. Hirundo rustica. Red-fronted or Chimney Swallow.

Upper parts glossy steel-blue; forehead and throat brownish-red; a broad band on the fore-neck dusky; tail very deeply forked, each feather, the two middle excepted, with a white spot on the inner web; breast and abdomen reddish-white. The young have the tail shorter, the plumage less glossy, the forehead and throat dull pale brown.

Male, $8\frac{3}{4}$, 14, $4\frac{1}{12}$, $\frac{4}{12}$, $\frac{5}{12}$, $\frac{1}{12}$, $\frac{3}{12}$. Female, $7\frac{3}{4}$, 14.

Generally distributed in Britain and Ireland, arriving from the tenth of April to the fifth of May, and departing early in October. The nest is placed under the eaves of out-houses, on beams or rafters within them, on the face of rocks, in quarries, or on the sides of wells, or the shafts of old coal-pits, and is formed of mud, with a lining of grass and feathers, its form being half-cup-shaped, or on a flat surface entirely so, always widely open above. The eggs, four or five, elongated, ten-twelfths in length, seven-twelfths in breadth, white or reddish-white, marked with dark-red dots and specks. Two broods are sometimes reared in the season.

Swallow. Common Swallow.

Hirundo rustica, Linn. Syst. Nat. i. 343.—Hirundo rustica, Temm. Man. d'Ornith. i. 427.—Hirundo rustica, Red-fronted or Chimney Swallow, MacGillivray, Brit. Birds, iii. 558.

34. Hirundo Urbica. White-rumped or Window Swallow.

Head, hind neck, and fore part of the back glossy steel-blue; rump and lower parts white; tail deeply forked, the feathers plain; the tarsi and toes feathered. The young differ from the adult chiefly in having the dark parts of the plumage duller, and tinged with brown.

Male, $5\frac{8}{12}$, 12, $4\frac{1}{2}$, $\frac{7}{24}$, $\frac{5}{12}$, $\frac{6}{12}$, $\frac{3}{12}$.

Generally distributed in Britain and Ireland, arriving

a few days later than the chimney swallow, and departing about the same time. The nest is placed in the upper corner of a window, under the eaves of out-houses, or on the face of a rock, and is formed of mud, with a lining of grass and feathers. It has only a small roundish aperture at the upper part. The eggs, four or five, are longish, about nine-twelfths in length, six and a half twelfths in breadth, pure white. Two broods are sometimes reared.

House Swallow. Window Swallow. Martin. House Martin. Martinet. Martlet.

Hirundo urbica, Linn. Syst. Nat. i. 347.—Hirundo urbica, Temm. Man. d'Ornith, i. 428.—Hirundo urbica, White-rumped Swallow, MacGillivray, Brit. Birds, iii. 573.

35. Hirundo riparia. Bank Swallow.

Upper parts and a broad band across the breast greyish-brown, lower parts brownish-white, tail slightly forked, edge of outer quill smooth. The young have the feathers of the upper parts greyish-black margined with light reddish-brown, the throat reddish-white with small dusky spots, the breast-band blackish-grey; and are much more beautiful than the adult birds.

Male, $5\frac{1}{4}$, 11, $4\frac{1}{6}$, $\frac{3}{12}$, $\frac{5}{12}$, $\frac{4}{12}$, $\frac{3}{12}$. Female, 5, 11.

Generally distributed in Britain and Ireland, but more local than the other species, residing in holes which it forms in abrupt banks. It arrives about the same period as they, but departs sooner, or about the middle of September. The nest is shallow, formed of straws, and lined with a few large feathers. The eggs from four to six, elongated, eight-twelfths in length, five and a half in breadth, white. Two broods are sometimes reared.

Sand Martin. Sand Swallow.

Hirundo riparia, Linn. Syst. Nat. i. 344.—Hirundo riparia, Temm. Man. d'Ornith. i. 429.—Hirundo riparia, Bank Swallow, MacGillivray, Brit. Birds, iii. 595.

FAMILY VI. CAPRIMULGINÆ. CAPRIMULGINE BIRDS, OR GOATSUCKERS.

Body very small, in proportion to the plumage, as in the owls, which they resemble also in being nocturnal; neck short; head very large, broad, and depressed. Bill

very short, much depressed, generally feeble, the horny part being small; upper mandible with the dorsal line convex, the ridge rather narrow, the edges inflected toward the end, the tip very narrow, and deflected; lower mandible smaller, with the angle extremely large, the crura slender, the edges inflected toward the end, the tip small and deflected. Mouth extremely wide; palate smooth, and nearly transparent; tongue extremely small, slender, tapering to an obtuse point; œsophagus wide, very thin, without crop; stomach large, roundish, its muscular coat very thin, the epithelium very hard, with prominent longitudinal rugæ; intestine short, wide, extremely thin; cœca large, oblong, narrowed at the base, as in Owls and Cuckoos; cloaca globular. Trachea of nearly uniform width, without inferior laryngeal muscles. Eyes very large. Nostrils elliptical. Apertures of ears large. Feet very small; tarsus partially feathered; toes four, the anterior connected by basal membranes, the first short and directed inwards, the second next, the third long; claws moderate, well arched, compressed, acute. Plumage full, very soft, blended; wings very long, with the second and third quills longest; tail long, of twelve feathers; almost all the species with very large bristles at the base of the upper mandible.

These birds are remarkable for their nocturnal habits, light and rapid flight, and great activity. They feed on insects, although some are said to be frugivorous, and are especially inhabitants of warm climates; several, however, residing during the summer in the colder countries. They nestle on the ground, in caves, or in hollow trees, and generally lay two eggs. The young, at first covered with down, remain until able to fly.

GENUS XX. CAPRIMULGUS. GOATSUCKER.

Bill extremely small, feeble, triangular, depressed; upper mandible compressed toward the very small, deflected tip,

with the edges inflected toward the end; lower mandible with the angle long and very wide, the dorsal line ascending, the crura extremely narrow, the narrow tip curved upwards; gape-line commencing beneath the posterior angle of the eye. Tongue very small, triangular; œsophagus rather wide, without crop; proventriculus large; stomach very large, round, membranous, with the epithelium thin; intestine short; cœca large, oblong, narrow at the commencement. Nostrils linear, with a horny operculum, in the fore part of the large, sparsely feathered, nasal membrane. Eyes very large. Apertures of ears very large, semilunar. Head very large, depressed, flattened above; neck rather short; body very small. Feet extremely small; tarsus very short, feathered anteriorly to near the base; first toe very small, anterior toes webbed at the base, the third much longer; claws very small, arched, compressed, that of the middle toe proportionally longer, curved outwards, and pectinate on its inner thin edge. Plumage full, very soft, blended; large flattened bristles along the base of the bill; wings very long, narrow, with the second quill longest, the first little shorter; tail very long, of ten broad rounded feathers.

The Goatsuckers fly in the dusk, in gloomy weather, or in the shade of woods, or by moonlight, feeding on insects, especially moths and beetles, which they seize on wing. Their feet not being formed for grasping, they seldom perch transversely on a branch. They nestle in a bare place on the ground, laying two broadly elliptical eggs. Species occur in most parts of the globe, but are not numerous in the colder or temperate parts.

36. Caprimulgus europæus. European Goatsucker.

Upper parts grey, minutely dotted and undulated with dusky, and variegated with yellowish-red, the head and back longitudinally streaked with black; lower parts transversely undulated with light red and dusky. In the male, the outer three quills have a large white spot on the inner web, and the two lateral tail-feathers are largely tipped with white. The young in their first plumage are similar to the female, but somewhat darker. The claw of the middle toe has about ten teeth, but frequently the tip is broken.

Male, 11, 23, $7\frac{3}{4}$, $\frac{9}{24}$, $\frac{8}{12}$, $\frac{9}{12}$, $\frac{7}{24}$. Female, $10\frac{1}{2}$, $21\frac{1}{2}$.

The eyes are fixed in the orbits nearly as strictly as in owls, and are much flattened, so that the idea of turning them to look through the semitransparent palate is preposterous. Nor does it fly with open mouth any more than the swallows. It produces a whirring noise at intervals, like the sound of a spinning wheel, and occasionally emits a shrill whistle. During the day it rests on the ground among furze or fern, or on the branch of a tree. The eggs, two in number, are broadly elliptical, an inch and two-twelfths long, ten-twelfths in breadth, white, clouded with ash-grey and brown. The young are at first densely covered with long whitish down, and have no serrature on the claws. It arrives from the middle to the end of May, departs in September, and is generally distributed, but not common.

Fern Owl. Churn Owl. Jar Owl. Dor Hawk. Night Jar, or Night Chur.

Caprimulgus europæus, Linn. Syst. Nat. i. 633.—Caprimulgus europæus, Temm. Man. d'Ornith. i. 436.—Caprimulgus europæus, European Goatsucker, MacGillivray, Brit. Birds, iii. 633.

Having disposed of two orders, we may now pause, and consider what may be next brought forward. Day and night can no longer be adduced in analogy, for most of the other land-birds are strictly diurnal; nor can we, with propriety, force them into a ternary series or circle. The species hitherto described are most expert flyers, but awkward pedestrians. On the principle of affinity, we ought to associate with them all the other birds which are more or less in the same predicament. These are the Bee-eaters and Kingfishers on the one hand, the Shrikes and Flycatchers on the other; birds of which there are few species with us, but which are abundant in the warmer regions of the globe. But the Cuckoos, which form a numerous tribe, although only one species occurs in this country, being so very similar to the Goatsuckers in their digestive organs, must, I think, come next in order. They are, in general, almost as little capable of walking as the birds already described, and belong to a group, of which the habit is to perch on trees or shrubs, whence they glide after passing insects.

ORDER III.

The birds of this order differ from those of any group hitherto described, excepting the Owls, in having the outer toe directed backwards, as well as the first. Feet of this kind have usually been considered as scansorial, because those of the Woodpeckers, eminently climbing birds, have the toes similarly arranged; but the species of this order are incapable of ascending a perpendicular body in the manner of those birds, and the mere circumstance of the reversion of the fourth toe is not at all indicative of such a habit. It is composed of several of the genera which, having zygodactylous and small feet, have usually been arranged by authors with the true Scansores, or Woodpeckers, namely, Bucco, Crotophaga, Cuculus, and perhaps others, with their numerous subdivisions. These birds not having been sufficiently studied by me, I am unable to characterize them in an adequate manner. They are all insectivorous, reside in woods and thickets, among the branches and foliage of which they search for food, have a rapid gliding, buoyant flight, are incapable of walking efficiently on the ground, and are destitute of song. The mouth is wide, the œsophagus narrow and nearly uniform, the stomach thin or moderately muscular, the intestine of moderate length. Such of them as are not permanently resident in warm climates, migrate into them in autumn, the nature of their food preventing their residence during winter in cold countries. In Britain there are representatives of only one family.

FAMILY VII. CUCULINÆ. CUCULINE BIRDS OR CUCKOOS.

Bill long or moderate, wide at the base, compressed toward the end, somewhat arched, and pointed; upper mandible with the ridge obtuse and arcuato-declinate, the edges sharp, notchless, the tip decurved. Tongue of moderate size, flattened, tapering; œsophagus wide, without dilatation; stomach very large, round, with its muscular coat thin, the epithelium soft and rugous; intestine of moderate length and width, with large oblong cœca, as in the Owls. Trachea with a single pair of inferior laryngeal muscles, being slips of the sterno-tracheales. Eyes of moderate size. Nostrils linear, oblong, or circular, direct, in the short bare nasal groove. Feet short, weak, or of moderate strength; tarsus short, with a very large scutella; toes four, scutellate, broad beneath; first small, second shorter than fourth, and united at the base with the third, which is very long, fourth reversed; claws moderate, compressed, curved, acute. Plumage moderately full, the feathers ovate, with a very short plumule; wings long or moderate, much rounded, the first quill short, the third and fourth longest; tail very long, ample, graduated or rounded, of twelve broad feathers.

The Cuculinæ, of which none are permanently resident in countries subject to severe winter cold, feed on insects, worms, and soft fruits, in procuring which they glide among the trees and foliage, leaping from branch to branch, but never climbing in the manner of Woodpeckers or Creepers. They fly with rapidity, but on the ground walk in a constrained and awkward manner.

GENUS XXI. CUCULUS. CUCKOO.

Bill of moderate length, rather slender, arcuato-declinate, broader than high at the base, compressed toward the end,

acute; upper mandible with the dorsal line arcuate, the ridge narrow, the edges with a slight sinus close to the declinate tip; gape-line arcuate. Tongue rather short, slender, emarginate, and minutely papillate at the base, with the tip acute, generally slit and lacerate; œsophagus wide, tapering; proventriculus rather large; stomach large, round, with its muscular coat very thin, and composed of large flattened fasciculi, the cuticular lining soft and rugous; intestine of moderate length, rather wide; cœca large, oblong. Nostrils elliptical, with a prominent margin. Eyes of moderate size. Feet very short; tarsus feathered half-way down, anteriorly broadly scutellate; toes small, broad beneath, the first very small, the fourth reversed, and longer than the second; claws rather small, arched, much compressed, laterally grooved, rather acute. Plumage soft and blended; wings long, straight, pointed, the first quill a third shorter than the second, the third pointed; tail long, graduated, of twelve rounded feathers.

The only species which visits this country is remarkable for depositing its eggs singly in the nests of other birds. Several other species are suspected of doing the same; but the habit is not general in this family, probably not even in the genus Cuculus.

37. Cuculus canorus. Grey Cuckoo.

In both sexes the upper parts bluish-grey, the fore part and sides of the neck ash-grey, the breast and sides of the body bluish-white, transversely barred with brownish-black, the quills dusky-brown, tinged externally with grey, their inner webs barred with white; the tail-feathers greyish-black, spotted along the shafts and on the inner web, and tipped with white. Young with the upper parts transversely barred with light red and clove-brown, the lower with brownish-white and dusky.

Male, 14, 23, $8\frac{8}{12}$, $\frac{10}{12}$, $\frac{7}{8}$, $\frac{10}{12}$, $\frac{9}{24}$.

This elegantly-formed and agreeably coloured bird, which visits us in the end of April and departs in July or August, is remarkable for its well-known cry, resembling the syllables Coo-coo, and its habit of depositing its eggs in the nests of the Pipit, and other small birds. It is distributed over the whole country, being met with in the most northern parts, and frequents parks and plantations bordered with fields and

pasture-grounds, woods and thickets, in upland valleys, as well as open moors destitute of trees. Being frequently seen abroad at early dawn, sometimes very late in the evening, and having been heard to emit its cry at all hours of the night, it appears to be somewhat nocturnal in its habits. In the structure of its digestive organs it is very intimately allied to the Owls and Goatsuckers. Its food is also similar to them, consisting of insects, and during part of the season of hairy caterpillars. The eggs are very small, averaging from ten to eleven-twelfths of an inch in length, from eight to nine-twelfths in breadth, white, greyish-white, or reddish-white, speckled with ash-grey or greyish-brown. They are deposited singly in the nest of the Meadow Pipit, Hedge Chanter, Pied Wagtail, or some other small bird. When the eggs are hatched, the young Cuckoo throws out of the nest in succession the young of its foster-parents, which are left to perish, and is fed by them until its departure in September.

Common Cuckoo.

Cuculus canorus, Linn. Syst. Nat. i. 168.—Cuculus canorus, Temm. Man. d'Ornith. i. 381.—Cuculus canorus, Grey Cuckoo, MacGillivray, Brit. Birds, iii. 109.

GENUS XXII. COCCYZUS. COWCOW.

Bill nearly as long as the head, slender, arcuato-declinate, broader than high at the base, compressed toward the end, acute; upper mandible with the dorsal line arcuate, the ridge narrow, the edges with a slight notch close to the declinate tip; gape-line arcuate. Tongue very slender, emarginate at the base, with long slender papillæ, the edges lacerated toward the end, the tip rather acute; œsophagus rather wide, tapering; proventriculus rather large; stomach large, round, with the muscular coat very thin, and composed of a single series of small fasciculi, the cuticular lining soft and rugous; intestine of moderate length, rather wide; cœca large, oblong. Nostrils oblong, half-closed by a membrane. Eyes of moderate size. Feet short; tarsus feathered one-third down, rather stout, with seven broad scutella; toes small, broad beneath; the first very small, the third longest, the fourth longer than the second, and reversed; claws rather small, arched, much compressed, laterally grooved, acute. Plumage soft and blended; wings of moderate length, pointed; the first quill a third shorter

than the second, the third longest; tail very long, graduated, of ten feathers.

This genus differs from Cuculus chiefly in having the bill more arched, the nostrils narrower, and not margined, and the tail of ten instead of twelve feathers.

38. Coccyzus americanus. Yellow-billed Cowcow.

Bill brownish-black above, yellow beneath; plumage of the upper parts light greyish-brown, the head tinged with grey, of the lower parts silvery-white; tail-feathers, the middle excepted, brownish-black, tipped with white.

Male, $12\frac{1}{2}$, 16, $5\frac{8}{12}$, $\frac{1}{12}$, 1, $\frac{9}{12}$, $\frac{4}{12}$. Female, $11\frac{3}{4}$, $15\frac{1}{2}$.

In summer generally distributed over the United States of America, whence it retires southward in September. It feeds on insects, larvæ, berries, grapes, and occasionally eggs. The eggs, deposited at different periods, are hatched by the bird itself, so that young birds in various stages, and eggs, may be found simultaneously in the nest. Two individuals of this species have been obtained in England, and two in Ireland.

Yellow-billed Cuckoo. Carolina Cuckoo. Cowbird. Rain-crow.

Cuculus americanus, Linn. Syst. Nat. i. 170.—Coccyzus americanus, Audub. Synop. 187.—Coccyzus americanus, Yellow-billed Cowcow, Macgillivray, Brit. Birds, 187.

ORDER IV. JACULATRICES. DARTERS.

Bill large, angular, straight or arched, pointed; upper mandible with very short feathered nasal sinuses, the ridge narrow, the sides sloping, the edges sharp, without notches, the tip acute. Tongue very small, triangular, bluntly pointed; œsophagus very wide, funnel-shaped, without crop; stomach large, round, with the muscular coat very thin, the epithelium soft and rugous; intestine of moderate length, very slender; no cœca; cloaca globular, and large. Eyes and apertures of ears of moderate size; nostrils linear. Feet remarkably small and feeble;

tarsus very short; toes short, and very slender, the first small, broad, and flattened beneath, the anterior three parallel and united in part of their length, or two anterior so united, the fourth directed backwards; claws arched, compressed, acute. Wings broad, rounded, with the first quill extremely small; tail of twelve feathers.

The peculiar form of the bill, and the rapid flight of these birds, have suggested the name which I have given to them. As the feebleness of their feet incapacitates them from walking, they either pursue their insect prey in open flight, or assuming a station, dart from thence upon it. The birds of one genus, Alcedo, feed upon small fishes, after which they plunge in the manner of Gannets. Although only two species occur in Britain, they are numerous in tropical countries. The families into which they may be arranged are ALCEDINÆ, GALBULINÆ, and TROGONINÆ, of which the two latter have the feet zygodactyle. It is only of the first of these families that representatives occur in Britain.

FAMILY VIII. ALCEDINÆ. ALCEDINE BIRDS OR KINGFISHERS.

Body compact; neck short; head rather large, oblong. Bill longer than the head, straight or slightly arched, opening to beneath the middle of the eye, pentagonal at the base, four-sided in the rest of its extent, compressed, and tapering to a point. Tongue very short, fleshy, with the sides nearly parallel, the tip bluntish; œsophagus wide, thin, without crop; stomach very large, roundish, membranous; intestine long, very slender, without cœca. Trachea destitute of inferior laryngeal muscles. Feet very small; tarsus short, bare; toes small, the first directed backwards, the anterior united in part of their extent,

and incapable of spreading; claws well curved, slender, compressed, acute. Plumage blended, but generally firm, and often highly coloured; wings of moderate length, broad; tail of twelve feathers.

These birds belong chiefly to the warmer regions of the globe. They feed upon insects, which they seize on wing, or upon small fishes, on which they dart from a perch. They generally nestle in holes, laying several elliptical white eggs. The young, at first scantily covered with down, remain until fully fledged.

Only a single species of each of two genera occurs in Britain.

GENUS XXIII. ALCEDO. KINGFISHER.

Bill longer than the head, straight, pentagonal at the base, then four-sided, compressed, and tapering to a point; upper mandible with the dorsal line almost straight, the ridge narrow, the side sloping, the edges sharp, and destitute of notch, the tip acute; lower mandible with the angle short and rather acute, the dorsal line ascending and slightly convex, the ridge narrow, the sides sloping outwards, the edges sharp, the tip acute; gape-line straight, commencing beneath the eyes. Both mandibles concave internally, tongue very small, flattened, broad, with the tip suddenly contracted; œsophagus very wide, without crop; stomach large, with a very thin muscular coat, and soft rugous epithelium; intestine of moderate length, very slender; no cœca; cloaca very large, globular. Nostrils linear, direct; nasal membrane short. Eyes of moderate size. Aperture of ear rather small, roundish. Feet remarkably small and feeble; tibia bare below; tarsus extremely short, roundish, with indistinct scales; toes short, very slender, the anterior united to nearly half their length, covered above with indistinct scales; claws arched, compressed, acute. Plumage soft, blended, but firm; feathers oblong; wings rather short, very broad, concave, rounded; primaries not much longer than the secondaries, the first extremely small, the third and fourth longest; tail short, rounded.

The Kingfishers are extensively distributed over the continents of Africa, Asia, part of Europe, the Indian Islands, and Australia. They feed on small fishes and insects, which they procure by darting upon them from an elevated place. They generally nestle in holes, and are of solitary habits.

39. Alcedo Ispida. Halcyon Kingfisher.

Upper part of the head and the wing-coverts dull green, spotted with light blue; middle of the back and the rump glossy light blue; throat and a patch on the side of the neck yellowish-white; lower parts yellowish-red; upper mandible dark brown, as are the margins and tip of the lower, the other parts pale orange; tarsi and toes orange-red, claws dark brown. Adults exhibit considerable differences in the tints of the colours. The young have the upper parts deep bluish-green, the lower yellowish-red, the feet flesh-coloured, shaded with blackish.

Male, $7\frac{1}{4}$, $10\frac{1}{4}$, $3\frac{2}{12}$, $1\frac{1}{2}$, $\frac{9}{24}$, $\frac{13}{24}$, $\frac{3}{12}$. Female, 7, 10.

This beautiful bird is permanently resident, and generally distributed, but no where common, and very rare in the northern parts. It feeds on minnows and other small fishes, nestles in holes in the steep banks of streams, and lays five or six eggs, which are broadly ovate, pure white, eleven-twelfths of an inch in length, nine-twelfths in breadth. Its flight is direct and rapid. Assuming a station on a stone, stump, or rail, it waits an opportunity of darting upon its prey.

Common Kingfisher.

Alcedo Ispida, Linn. Syst. Nat. i. 179.—Alcedo Ispida, Temm. Man. d'Ornith, i. 423.—Alcedo Ispida, Macgillivray, Brit. Birds, iii. 671.

GENUS XXIV. MEROPS. BEE-EATER.

Bill longer than the head, somewhat arched, pentagonal at the base, then four-sided, compressed and tapering to a point; upper mandible with the dorsal line arcuate, the ridge carinate, the sides sloping, the edges sharp, and destitute of notch, the tip acute; lower mandible with the angle short, the dorsal line slightly arcuate, the ridge narrow, the tip acute; gape-line arcuate, commencing beneath the eyes. Both mandibles internally concave, the upper with three prominent lines. Nostrils broadly elliptical, or roundish, nasal membrane short. Eyes of moderate size. Aperture

of ear moderate, roundish. Feet remarkably small and feeble; tibia bare below; tarsus extremely short, roundish, with indistinct scales; toes short, very slender, the anterior parallel and partially united, covered above with distinct scales; claws curved, slender, much compressed, very acute. Plumage blended, but firm; feathers oblong; wings very broad, long, pointed; the primaries much longer than the secondaries, the first extremely small, the second longest; tail long, the two middle feathers generally much longer and pointed.

The Bee-eaters, which are of a more elongated form than the Kingfishers, and for the most part gaudily coloured, belong to the warmer regions of the Old Continent, and its islands. They feed upon insects, have a rapid and buoyant flight, and generally nestle in holes. One species visits this country at irregular intervals.

40. Merops Apiaster. Yellow-throated Bee-eater.

Middle tail-feathers about an inch longer than the rest. Upper part of head, hind neck, and part of the back, brownish-red, that colour fading into yellow on the rump and scapulars; forehead pale blue; loral space and a band behind the eye black; throat rich yellow, that colour bounded by a band of black; lower parts of light green; bill black, feet reddish-brown, claws dusky. Young with the upper parts greenish-brown, a red band above the eyes, the throat dull yellow, without the black band, the tail-feathers of equal length.

Male, $10\frac{3}{4}$, ..., $5\frac{1}{12}$, $1\frac{5}{12}$, $\frac{1}{2}$, $\frac{7}{24}$, $\frac{9}{24}$.

Migrating from Africa to the warmer parts of Europe, it has several times been met with in the south of England, and once even in Galloway, as well as in Ireland. It is gregarious, feeds on insects, which it pursues much in the manner of Swallows, nestles in holes, and lays from five to seven roundish white eggs.

Common Bee-eater.

Merops Apiaster, Linn. Syst. Nat. i. 182.—Merops Apiaster, Temm. Man. d'Ornith, i. 420.—Merops Apiaster, Yellow-throated Bee-eater, Macgillivray, Brit. Birds, iii. 685.

Coming now to the confines of the extensive group of birds which, in moving about in search of food, employ their wings

exclusively, we find some which, graduating into the series of Walking Birds, are in a manner intermediate. Of this kind are the Shrikes, Flycatchers, various other families, of which we have no representatives in Britain, and perhaps the Rollers. The Shrikes are in some respects closely allied to the Hawks, in others to the Thrushes, while they are also intimately connected with the Flycatchers, which are akin to the Swallows.

ORDER V. EXCURTRICES. SNATCHERS.

Body ovate, compact; neck short; head rather large, ovate. Bill short or of moderate length, broad at the base, compressed at the end; upper mandible with a small decurved tip, behind which on either side are a sinus or notch, and a tooth-like process, which is often very prominent. Tongue narrow, flat, emarginate, and papillate at the base, thin-edged, with the point slit, or lacerated; œsophagus wide, without crop; stomach elliptical, moderately muscular, having two distinct lateral muscles, its epithelium dense and rugous; intestine short and wide; cœca very small. Trachea cylindrical, the inferior larynx with four pairs of muscles. Legs very short and small, or moderate; tarsus much compressed, with about seven scutella; toes four, slender, compressed; the first stouter, and with its claw nearly as long as the third, which is united to the second at the base, the lateral toes nearly equal; claws rather long, curved or arched, much compressed, laterally grooved, very acute. Plumage soft, generally blended; wings rather long, rounded, of eighteen quills, the first very small, the third and fourth longest; tail of twelve feathers.

Species of this order occur in all parts of the globe, but their number increases with the temperature, and those which breed in the northern regions migrate southward as winter approaches. The larger species feed on mice, small birds, reptiles, and insects; are shy, ferocious, tyrannical, and unsocial; frequent woods and thickets; and have a rapid, buoyant, and undulating flight. The smaller species feed on insects, some of them also occasionally on small soft fruits. They nestle in trees and bushes, sometimes in holes, and make an elaborate nest, lining it with soft materials. The young, at first blind and bare, remain until able to fly. Three families may be referred to this order: LANIINÆ, MYIOTHERINÆ, PSARINÆ, and CORACIINÆ, the first two being the Shrikes and Flychasers, of which we have a few species, the next the Thick-bills, of which we have none, and the last the Rollers, represented by a single species.

FAMILY IX. LANIINÆ. LANIINE BIRDS OR SHRIKES.

Body compact, moderately full; neck rather short; head large, broadly ovate, or roundish. Bill rather short, or moderate, strong, as high as broad at the base, compressed; upper mandible with the ridge convex, the edges sharp, with well-marked dentiform process and notch, the tip slender, decurved, acute; lower mandible with the tip small, ascending, with a sinus behind it. Mouth rather wide; both mandibles concave; tongue sagittate at the base, tapering, thin-edged, with the tip slit and lacerated; œsophagus of moderate width, without crop; proventriculus oblong, with short cylindrical glandules; stomach elliptical, moderately muscular, the epithelium thin and rugous; intestine short, of moderate

width ; cœca very small and cylindrical. Eyes of moderate size. Nostrils roundish or elliptical. Aperture of ear large. Trachea with four pairs of inferior laryngeal muscles. Legs rather short, of moderate strength ; tarsus rather slender, compressed, with seven anterior scutella, sharp-edged behind ; toes four, rather small, compressed, the outer and middle united at the base ; the first much stouter and long, the lateral nearly equal, all scutellate above ; claws rather long, arched, much compressed, laterally grooved, extremely acute. Plumage soft and blended, the feathers ovate and rounded ; a row of stiffish bristles at the base of the upper mandible on each side ; wings of moderate length, broad, rounded, the first quill very small, the third, fourth, and fifth longest ; tail of twelve feathers.

The Laniinæ are in a manner intermediate between the Myiotherinæ, Turdinæ, Corvinæ, and Falconinæ, of which they combine the characters. They resemble the Falconinæ in their decurved and toothed upper mandible, as well as in their habits, many of the species being addicted to the pursuit of small quadrupeds, birds, and reptiles. Their general food, however, is insects, worms, mollusca, and fruits. They are chiefly natives of warm climates, so that few species occur in Britain, where none are permanently resident.

GENUS XXV. LANIUS. SHRIKES OR BUTCHER BIRDS.

Bill rather short, strong, pentagonal at the base, higher than broad, much compressed toward the end ; upper mandible with its dorsal line convex, the ridge rather narrow, the edges with a marked projection and a sinus, near the considerably decurved, compressed, slender, acute tip ; lower mandible with the tip curved a little upwards, slender, acute. Mouth rather wide ; tongue sagittate at the base, tapering, thin-edged, with the tip slit and lacerated ; œsophagus of

moderate width, without crop or dilatation; proventriculus oblong; stomach elliptical, moderately muscular; its epithelium thin, dense, and rugous; intestine short; cœca very small, and cylindrical; cloaca oblong. Nostrils rather small, roundish, in the fore part of the moderately large nasal sinus, which is covered with bristly feathers directed forwards. Eyes of moderate size. Aperture of ear roundish, and rather large. Body compact; neck short; head large, ovate. Legs rather short, and of moderate strength; tarsus rather slender, compressed, with seven anterior scutella, sharp behind; toes rather small, much compressed, the outer and middle united as far as the second joint, the first stout and long, the lateral nearly equal; claws rather long, arched, much compressed, laterally grooved, extremely acute. Plumage soft and blended, the feathers ovate; stiffish basirostral bristles; wings of moderate length, broad, rather rounded; tail long, straight, rounded, of twelve rather narrow feathers.

The Shrikes are remarkable for their direct affinity to the Falconinæ, exhibited by the structure of their bill, and their rapacious habits, most of the larger species killing small birds, mice, and reptiles, as well as insects, on which latter the smaller species chiefly feed. They are generally unsocial, tyrannical, and courageous birds, with a harsh, screamy voice, and undulating flight. They seldom alight on the ground, but assume a station on a twig, or other perch, whence they sally in pursuit of their prey, or search for it along the thickets and hedges, hovering like hawks. The larger insects they usually impale on a thorn, or fix in the fork of a branch. They form an elaborate hemispherical nest, and lay from four to eight spotted eggs. The young, at first blind and bare, remain until able to fly.

41. Lanius Excubitor. Great Cinereous Shrike.

Male with the upper parts light ash-grey, the lower white; on the side of the head from the nasal membrane to behind the ear, a broad black band, margined above with white; quills brownish-black, their bases white, forming two patches of that colour when the wing is closed; terminal portion of outer scapulars, and tips of all the quills excepting the outer five, white; tail black, the feathers white at both extremities,

the latter colour enlarging towards the sides, so that the lateral feather is entirely white, excepting part of the shaft. Female similar, but with the forehead and breast marked with semi-circular grey lines. The young have the upper parts dark brownish-grey, the tail-coverts faintly barred with dusky, the lower parts greyish-white, tinged with brown, and transversely barred with brownish-grey, the lateral bands on the head brown, the wings and tail blackish-brown, marked with white, but to a less extent than in the adult.

Male, $10\frac{1}{2}$, $14\frac{3}{4}$, $4\frac{8}{12}$, $\frac{9}{12}$, $1\frac{1}{12}$, $\frac{15}{24}$, $9\frac{9}{24}$.

This species is an occasional or accidental visitant, occurring chiefly in the winter season, it being an inhabitant of the northern parts of Europe. It has been found in various parts of England as well as Ireland, and less frequently in Scotland. It preys on insects, frogs, lizards, small birds, and quadrupeds, which it affixes to a thorn, or jams into the fork of a branch, that it may be enabled to tear them up into small morsels.

Grey Shrike. Butcher Bird. Mountain Magpie.

Lanius Excubitor, Linn. Syst. Nat. i. 135.—Lanius Excubitor, Temm. Man. d'Ornith, i. 142.—Lanius Excubitor, Great Cinereous Shrike, Macgillivray, Brit. Birds, ii. 492.

42. Lanius Rutilus. Woodchat Shrike.

Male with the upper part of the head and the hind neck brownish-red, the back black, the scapulars white, the rump grey, the wings black, the bases of the primaries and the tips of the secondaries white, the tail black, excepting the outer feathers, the basal half of the next and its tip, with those of the rest, which are white; a broad black frontal band, margined anteriorly with white; a black cheek-band; the lower parts white. Female with the head and neck dull red, the back brownish-black, the lower parts greyish-white, with transverse brownish lines. Young reddish-brown above, brownish-white, with transverse lines beneath.

Male $7\frac{8}{12}$, .., $3\frac{10}{12}$; $\frac{15}{24}$, $\frac{11}{12}$; $\frac{13}{24}$, $\frac{4}{12}$. Female, $7\frac{3}{4}$.

Only a few instances of the occurrence of this species in England are recorded. It is abundant in many parts of Africa, visits the European continent in spring, and returns in September and October. Its food consists of insects, and occasionally small birds and quadrupeds.

Woodchat. Wood Shrike.

Lanius rutilus, Lath. Ind. Ornith. i. 70.—Lanius rufus, Temm. Man. d'Ornith, i. 147.—Lanius rutilus, the Woodchat Shrike, Macgillivray, Brit. Birds, iii. 502.

43. Lanius Collurio. Red-backed Shrike.

Male with the back and wing-coverts brownish-red, the crown of the head, hind neck, and rump ash-grey, the breast and sides rose-coloured; a broad band of black from the bill to behind the ear; tail white, towards the end blackish-brown, of which colour are the two middle feathers. Female with the upper parts reddish-brown, the hind neck tinged with grey; the lower parts greyish-white, transversely undulated with dusky. Young dull reddish-brown above, the hind neck and rump tinged with grey, the lower parts greyish-white, the breast and sides with dark brown undulated semicircular lines, of which there are two on each feather.

Male, $7\frac{1}{4}$, 12, $3\frac{9}{12}$, $\frac{1}{2}$, $\frac{10}{12}$, $\frac{11}{12}$, $\frac{8}{12}$. Female, $7\frac{1}{4}$, $12\frac{1}{4}$.

Not uncommon in the southern parts of England, becoming rarer as we proceed northwards, and not hitherto observed in Scotland. It frequents the margins of woods, thickets, and tall hedges, as well as open downs and commons, more or less covered with furze; feeds on insects, and sometimes on birds; nestles in hedges or bushes; and lays five or six eggs, ten and a half twelfths long, seven-twelfths in breadth, light cream-coloured, sometimes tinged with blue, and marked with dots, spots, and small patches of reddish-brown, and pale purplish-grey, generally scattered, but towards the larger end forming a broad ring. It arrives toward the middle of May, and departs in September.

Red-backed Butcher-bird. Flusher.

Lanius Collurio, Linn. Syst. Nat. i. 136.—Lanius Collurio, Temm. Man. d'Ornith.—Lanius Collurio, Red-backed Shrike, Macgillivray, Brit. Birds, iii. 505.

FAMILY X. MYIOTHERINÆ. FLYCHASERS.

Body ovate, compact, or rather slender; neck short; head of moderate size, broadly ovate, rounded above. Bill straight, tapering, depressed, or much broader than high, compressed only at the end; upper mandible with the ridge narrow, the sides sloping and convex, the edges sharp and deflected, the tip very narrow, deflected, generally curved over that of the lower, the notches very small. Mouth wide; tongue triangular, flat, emarginate and papillate at the base, its tip slit and lacerated; œso-

phagus wide at the commencement, rapidly contracting, and then of moderate width; stomach roundish or broadly elliptical, moderately compressed, muscular, with the lateral muscles of moderate size, the epithelium thin, dense, longitudinally rugous; intestine short, rather wide; cœca minute; rectum very short, with an oblong or pyriform dilatation. Trachea considerably flattened, slightly tapering; the inferior larynx with four pairs of muscles, which are generally blended into a knob-like mass on each side. Eyes of moderate size. Nostrils very small, elliptical or roundish, in the anterior part of the broad nasal membrane, which is feathered. External aperture of ear very large, elliptical. Legs very small; tarsus very short, slender, moderately compressed, with seven, often very broad, anterior scutella; toes small, much compressed; the first of moderate length, not much shorter than the third, the second and fourth equal, the third and fourth united at the base, all scutellate; claws long, slender, arched, compressed, laterally grooved, acute. Plumage generally soft and blended. About six strong bristles on each side at the base of the upper mandible, and several smaller on the nasal membrane; wings of moderate length, broad, rounded; tail of twelve feathers, the wings and tail very much in form.

The peculiar form of the bill, with the strong bristles at its base, and the small size of the feet, afford the most prominent characters of this family. The species of which it is composed reside in woods and thickets, among the twigs and foliage of which they search for their insect food, seldom alighting on the ground. Very frequently they take a station on a twig, wall, or stone, from whence they sally forth after passing insects. The larger species also prey upon smaller birds, and in their habits resemble the Shrikes, while the smaller are allied to the Sylviinæ and Motacillinæ. They are numerous in the warmer regions of both continents, and those which breed in the

colder, migrate southward in autumn. Their flight is rapid, their voice harsh and shrill, although some emit modulated sounds. They form a well-arranged cup-shaped nest, and lay four or five spotted eggs. The young remain in the nest until fully fledged.

GENUS XXVI. MUSCICAPA. FLYCATCHER.

Bill of moderate length, straight, broader than high at the base, gradually compressed toward the end, with the ridge rather sharp, the sides sloping, convex toward the end, the notches very obscure, the tip narrow and a little declinate. Mandibles internally moderately concave; mouth rather wide; tongue flat, deeply emarginate, and finely papillate at the base, with the tip slit and lacerated; œsophagus rather wide at first, afterwards of nearly uniform width; stomach a broadly elliptical gizzard, with moderate muscles, and dense, broadly rugous, epithelium; intestine short, rather wide, with two minute cœca. Nostrils elliptical, pervious. Eyes small, eyelids feathered. Aperture of ear elliptical, very large. Head of moderate size, broadly ovate; neck short; body rather slender. Feet short and feeble; tarsus very short, slender, with the seven anterior scutella partly blended; toes small, compressed, the lateral equal; claws rather long, extremely compressed, arched, acute. Plumage soft and blended; long stiff basirostral bristles; wings rather long, broad, rather pointed, the first quill not half the length of the second, which is about the same length as the third. Tail moderate, straight, even, or a little emarginate.

The Flycatchers live on insects, which they generally seize on wing. Their flight is light and quick, when protracted undulatory; but they walk little, and by short hops. Their nests are of moderate size, neatly constructed, and lined with hair or feathers. The female seldom differs much from the male in colour.

44. Muscicapa grisola. Spotted Grey Flycatcher.

Bill black, the base of the lower mandible flesh-coloured; upper parts brownish-grey, the head spotted with dusky brown;

lower parts greyish-white, the neck and fore part of the breast streaked with greyish-brown, the sides and lower wing-coverts light reddish-brown. Young with the bill light brown, the upper parts dull yellowish-grey; the feathers edged with dusky; the wing-coverts, quills, and tail-feathers chocolate brown, the former tipped, the latter margined with pale brownish-red.

Male, $6\frac{2}{12}$, $10\frac{1}{4}$, $3\frac{1}{4}$, $\frac{7}{12}$, $\frac{7}{12}$, $\frac{5}{12}$, $\frac{5}{24}$. Female, 6, 10.

This species, which arrives from the middle to the end of May, and departs in the beginning of October, is generally distributed in England, Scotland, and Ireland, frequenting plantations, low bushy hollows, orchards, and gardens. It usually catches its insect prey on wing, and returns to its station. The nest, which is placed in the hole of a wall or tree, or on a branch, against the wall, is small, compact, composed of straws, moss, and hair, and lined with feathers. The eggs, four or five in number, are nine-twelfths long, six and a half twelfths broad, bluish-white, clouded and spotted with light brownish-red and purplish-grey.

Spotted Flycatcher. Grey Flycatcher. Bee-bird. Cherry-chopper.

Muscicapa grisola, Linn. Syst. Nat. i. 328.—Muscicapa grisola, Temm. Man. d'Ornith. i. 152.—Muscicapa grisola, Spotted Grey Flycatcher, MacGillivray, Brit. Birds, iii. 518.

45. Muscicapa atricapilla. Pied Flycatcher.

Male with the upper parts black; part of the forehead, a patch on the wing, and the outer webs of the two outer tail-feathers on each side, as well as all the lower parts, white. Female and young greyish-brown above, brownish-white beneath.

Male, $5\frac{1}{4}$, 8, $3\frac{2}{12}$, $\frac{11}{24}$, $\frac{8}{12}$, $\frac{11}{24}$, $\frac{3}{12}$. Female, $5\frac{1}{12}$, $3\frac{1}{12}$.

Arrives from the middle of April to the beginning of May, and departs in September. Occurs in various parts of England, but is nowhere common. The eggs are five or six, pale blue, like those of the Redstart, eight and a half twelfths long, and rather more than half an inch in breadth.

Muscicapa atricapilla, Linn. Syst. Nat. i. 396.—Muscicapa luctuosa, Temm. Man. d'Ornith. i. 155.—Muscicapa luctuosa, Pied Flycatcher, MacGillivray, Brit. Birds, iii. 524.

FAMILY XI. CORACIINÆ. CORACIINE BIRDS, OR ROLLERS.

Bill stout, of moderate length, broad at the base, gradually compressed toward the end; upper mandible with the dorsal outline convex, the ridge indistinct, the sides convex, the edges thin, with a faint sinus close to the tip, which is slender and deflected. Mouth wide, the gape-line commencing beneath the eyes. Nostrils basal, rather large, partially concealed by the feathers. Eyes of moderate size. Head large, roundish, or broadly ovate; neck short; body moderately full. Feet small; tarsus very short, rather stout, with seven broad scutella; toes moderate, the second shorter than the fourth; claws moderately curved, much compressed, laterally grooved, acute. Plumage moderately full, blended; bristles at the base of the bill generally strong; wings of moderate length, broad, with the first quill little shorter than the second, the third longest; tail of twelve feathers, of moderate length.

The birds of this family are inhabitants of warm climates, and for the most part gaudily coloured. They are nearly allied to the Laniinæ and Myiotherinæ on the one hand, and to the Turdinæ and Thremmaphilinæ on the other. One species occurs in Britain, but only as a straggler.

GENUS XXVII. CORACIAS. ROLLER.

Bill nearly as long as the head, rather broad at the base, but presently compressed, and higher than broad; upper mandible with the dorsal line slightly arched and declinate, the ridge obtuse, the edges sharp, with a slight sinus close to the small, deflected, rather acute tip; lower mandible with the tip narrow and obliquely truncate; gape-line slightly arched, commencing beneath the eyes. Nostrils

basal, lateral, oblique, linear, partially concealed by the feathers. Eyes of moderate size, with a bare triangular space behind. Feet very short; tarsus with seven very broad scutella: hind toe rather small, second shorter than the third, anterior toes free; claws of moderate length, arched, much compressed, slender, acute. Plumage rather full, blended; several strong decurved bristles on each side of the mouth; wings of moderate length, very broad; the second and third quills longest; tail rather long, of twelve broad feathers, generally even, but sometimes with the outer feathers longer.

The Rollers are peculiar to the Old Continent and its islands, species occurring in the warmer parts of Asia, and in Africa, and one of them extending into Europe.

46. Coracias garrula. Garrulous Roller.

Head, neck, and lower parts light bluish-green; back and scapulars light brown; smaller wing-coverts light blue; quills light greenish-blue at the base, deep bluish-black in the rest of their extent; tail greenish-blue, the outer feathers tipped with black, and about a quarter of an inch longer than the rest. Young dull brown above, greyish-green beneath.

Male, 13, .., $7\frac{7}{12}$, $1\frac{4}{12}$, 1, 1, $\frac{11}{24}$.

The Roller is said to occur in various parts of Asia and Africa, and to extend even as far northward as Denmark and Sweden. Although very rare in Britain, it has been several times obtained in England and Scotland, one having been killed even in Orkney, and another in Shetland. It is said to nestle in hollow trees, or in holes on the banks of rivers, and to lay four or five eggs of a broadly elliptical form, smooth, and of a glossy white.

Common Roller.

Coracias garrula, Linn. Syst. Nat. i. 159.—Coracias garrula, Temm. Man. d'Ornith. i. 127.—Coracias garrula, Garrulous Roller, MacGillivray, Brit. Birds, iii. 540.

The birds described above may be considered as belonging to a group characterized by their inaptitude for walking, and which might therefore be viewed as Aërial, compared with those which follow, and which, being equally well adapted for walking and flying, might be designated as

Terrestrial. These latter may be arranged under eight distinct orders, which differ from each other in various respects, although generally very closely allied in structure. They are all more or less insectivorous, most of them also frugivorous, and some feed so promiscuously as to merit the name of Omnivoræ, given to them by some ornithologists. In all the stomach is muscular, the intestine of moderate length, and the cœca very small, or, in one group, wanting.

ORDER VI. VAGATRICES. WANDERERS.

Birds generally of moderate size, having the body compact, the neck rather short, or of moderate length, the head ovate or oblong. Bill stout, nearly straight, compressed towards the end, tapering, pointed, sharp-edged; the upper mandible with a slight notch or sinus, on each side, close to the tip. Mouth of moderate width; tongue oblong, emarginate and papillate at the base, horny towards the end, thin-edged, with the point slit or lacerated; œsophagus rather wide, without dilatation; stomach a gizzard of moderate power, having distinct lateral muscles, the epithelium thin, dense, and longitudinally rugous; intestine of moderate length and width; cœca very small, cylindrical, adnate; rectum with an oblong dilatation. Nostrils small. Eyes of moderate size. Aperture of ear rather large. Legs of moderate length, rather stout; tarsus moderately long, with from seven to ten anterior scutella; toes four, the three anterior moderately spreading, the first stout, and of the same length as the second and fourth, the outer two united at the base; claws arched, stout, compressed, laterally grooved, acute. Wings of moderate length, rather broad, much rounded, the prima-

ries narrowed toward the end, and separated when the wing is expanded; the first very short, the fourth and fifth longest.

Birds of this order are found in all parts of the globe. They are frequently gregarious; those which feed chiefly on larvæ, worms, or seeds, are always so. Most of the larger species are omnivorous. They walk with ease, leap under excitement, or even run with considerable speed. Their flight is strong, generally performed by regularly timed beats. They nestle and rest in high places, sometimes, however, in holes, even in the ground. The nest of the larger species is rudely, of the smaller neatly, constructed. The eggs, from three to ten in number, are spotted, and the young, at first blind and thinly covered with down, remain until fledged.

FAMILY XII. CORVINÆ. CORVINE BIRDS OR CROWS.

Body ovate, compact, moderately stout; neck short or moderate; head large, oval, rather flattened above. Bill about the length of the head, stout, nearly straight, compressed toward the end; upper mandible with the dorsal line arcuato-declinate, the ridge convex, the edges sharp, with a slight notch or sinus close to the end, the tip slightly deflected. Palate anteriorly with several longitudinal ridges; tongue oblong, emarginate and papillate at the base, flat above, horny and thin-edged toward the tip, which is slit and lacerated; throat of moderate width; œsophagus of nearly uniform width; proventriculus bulbiform; stomach a gizzard of moderate power, elliptical, with the lateral muscles somewhat distinct, the cuticular lining of moderate thickness, and longitudinally rugous; intestine of moderate length; cœca small, cylindrical, adnate; rectum with an oblong or globular dilatation. Eyes

of moderate size, eyelids feathered. Nostrils moderate, broadly elliptical, in the fore part of the broad nasal sinus, and covered by reversed bristly feathers. Aperture of ear round and rather large. Feet of moderate length, stout; tarsus compressed with eight or ten scutella, and two posterior longitudinal plates; toes moderate, scutellate above, padded and granulate beneath; the third and fourth united at the base, the hind toe stronger, but about the same length as the second and fourth; claws rather large, arched, compressed, obscurely grooved, acute. Plumage rather full, on the upper parts compact; wings long or moderate, much rounded, the first quill about half the length of the fourth or fifth, which are longest; tail moderate or elongated, of twelve broad feathers.

The Corvinæ feed on worms, insects, fruits, flesh, fish, and other substances, the stomach being muscular, and with the aid of gravel or particles of quartz, capable of triturating the harder matters. They are cautious and vigilant; walk sedately, fly with considerable speed; and wander to great distances in search of food. They form a bulky, generally rather flat nest, composed of sticks, and lined with soft materials. The eggs, from three to seven, are spotted or freckled, and of an oblong form. The young when fledged are coloured like the adults, but with less gloss. The males and females are alike, the latter somewhat smaller. Species of this family occur in all countries.

GENUS XXVIII. CORVUS. CROW.

Bill rather long, straight, stout, tapering, of nearly equal height and breadth at the base, compressed toward the end; upper mandible with the dorsal line slightly arched, and toward the end declinate, the ridge rather narrow, the edges direct, sharp, with a slight notch or sinus close to the tip, which is somewhat declinate, rather sharp, and projects a little; lower mandible with the angle of moderate length

and width, the dorsal line slightly convex, ascending toward the end, the tip rather acute ; gape-line straightish. Mouth of moderate width ; upper mandible internally concave, with seven ridges ; tongue oblong, emarginate and papillate at the base, flat above, horny, with the tip slit and slightly fimbriated ; œsophagus wide, nearly uniform ; stomach oblong, compressed, with the muscular coat thick, the epithelium dense, with a few deep longitudinal grooves ; intestine of moderate length and width, with the cœca very small and cylindrical ; rectum with a globular dilatation. Nostrils roundish, in the fore part of the short nasal sinus, concealed by the narrow reversed stiff feathers, which cover a large portion of the bill. Eyes of moderate size ; eyelids feathered. Aperture of ear roundish, moderate. Head large, oblong, rather convex above ; neck rather short ; body ovate, compact. Legs of moderate length, strong ; tarsi rather short, compressed behind, anteriorly with eight scutella, posteriorly with two longitudinal plates ; toes of moderate size, the outer adherent to the second joint ; the first comparatively large, the lateral equal, the third considerably longer, all with large scutella ; claws strong, arched, compressed, rather sharp, the first with an obscure groove on the sides. Plumage generally dense, but soft, and highly glossed ; feathers at the base of the upper mandible linear, stiff, and reversed ; basirostral decurved bristles ; wings long, much rounded, the first quill very short and narrow, the fourth generally longest ; tail of moderate length or long, rounded, of twelve broad rounded feathers.

Five permanently resident species occur in Britain, and a single individual of another has been seen in one of the Hebrides. They are for the most part omnivorous in the fullest sense, although each species differs greatly in many of its habits. They search for food in open places, walk in a sedate manner, have a moderately rapid flight, nestle in trees, towers, buildings of various kinds, or rocks, producing from three to nine eggs, which are deposited very early in the season. Their cries vary from a hoarse croak to a caw or chatter, but are considerably varied. They are easily tamed, and may be taught to imitate the human voice.

47. Corvus Corax. Black Raven.

Feathers of the throat lanceolate, distinct, compact, with elongated points; tail much rounded, slightly bent up towards the end; plumage black, splendent, with purplish-blue reflections on the upper, and green on the lower parts. Young with less gloss, but with the colours similar.

Male, 26, 52, .., 3, $2\frac{3}{4}$, 2, $\frac{3}{4}$. Female, 25, 49.

The Raven is more abundant in the northern and western parts of Scotland than in the southern, or in England, in many parts of which it has been extirpated. Its flight is commonly steady and rather slow, but it can urge its speed to a great degree of rapidity. In fine weather it often soars to a vast height, floating as it were over the mountain-tops. It feeds on carcasses of all kinds, stranded fish, crustacea, insects, worms, small quadrupeds, young birds, grain, and other substances. The nest is placed on a rock or tall tree, and is composed of twigs, grass, wool, and feathers, or other materials. The eggs, from four to seven, are about two inches long, an inch and four or five twelfths broad, pale green, with small oblong spots and blotches of greenish-brown and grey. If unmolested, they breed in the same spot year after year. Should one of a pair be killed during incubation, or even after the young have left the nest, the survivor soon finds a mate; which is also the case with the Carrion Crow and Hooded Crow. This species is easily tamed, when it can be taught to modulate its hoarse voice so as to produce some articulate sounds. It is perhaps the most sagacious of all our native birds.

Raven. Crow. Corby.

Corvus Corax, Linn. Syst. Nat. i. 155.—Corvus Corax, Temm. Man. d'Ornith. i. 107.—Corvus Corax, the Raven, MacGillivray, Brit. Birds, i. 498.

48. Corvus leucophæus. Pied Raven.

Feathers of the throat lanceolate, distinct, compact, with elongated points; tail much rounded; bill and feet dusky; claws and tips of mandibles white; head, throat, breast, abdomen, the greater part of the wings, some of the lower tail-coverts, and part of the middle tail-feathers, white; hind neck, back, scapulars, some of the wing-coverts and secondaries, upper tail-coverts, most of the tail-feathers, and some of the elongated feathers on the fore neck, black. The bill in this supposed species is larger than in the Black Raven, being

not only higher at the base, but more elongated, and in form more attenuated at the end. The principal reason for admitting its specific difference is, that all the individuals described by authors agree in the distribution of the colours, although some slight variations occur in them. It is possible, however, that this Pied Raven may be merely a variety of the common or black species.

Male, 25, .., .., $3\frac{4}{12}$, $2\frac{3}{4}$, 2, $1\frac{8}{12}$.

An individual seen by me in the island of Harris, one of the outer Hebrides, is the only one hitherto observed in Britain. It frequented for several weeks the Hill of Northtown, did not associate with other birds, and seemed a neglected or persecuted stranger. The above brief description is taken from a specimen presented to me by Dr L. Edmonstone of Shetland, who procured it from Ferroe, to which this species or variety is peculiar.

White Raven. Ferroe Raven.

Corvus albus borealis, Briss. Ornith. vi. Suppl. 33.—Corvus leucophæus, Temm. Man. d'Ornith. iii. 745.—Corvus leucophæus, Pied Raven, MacGillivray, Brit. Birds, iii. 745.

49. Corvus Corone. Carrion Crow.

Feathers of the throat short, ovato-lanceolate, compact; tail straight, slightly rounded; plumage black, highly glossed, with purple reflections above, and green beneath. Young similar, but less glossy.

Male, 22, $41\frac{1}{4}$, 14, $2\frac{1}{4}$, $1\frac{1}{2}$, $\frac{3}{4}$. Female, 20, 40.

Not very uncommon in many parts of England, Scotland, and Ireland. This species resembles the Raven in its habits, frequenting open moors, hilly pastures, the fields, and shores, and feeding on small quadrupeds, young birds, crustacea, mollusca, worms, grubs, and grain, but especially carrion. It is rather solitary, although occasionally gregarious; nestles in rocks and tall trees, forming a bulky nest, and laying from four to six eggs, which are pale bluish-grey, spotted and blotched with dark umber or clove brown, and purplish-grey, an inch and three-quarters in length, and an inch and two-twelfths in breadth. It is said sometimes to pair with the next species, and some individuals, apparently ignorant of both, have considered them as specifically identical.

Crow. Gor Crow. Black Crow. Corby Crow. Hoody. Bran.

Corvus Corone, Linn. Syst. Nat. i. 155.—Corvus Corone, Temm. Man. d'Ornith. i. 103.—Corvus Corone, Carrion Crow, MacGillivray, Brit. Birds, i. 516.

50. Corvus Cornix. Hooded Crow.

Feathers of the throat short, lanceolate, compact; tail straight, slightly rounded; head, fore-neck, wings, and tail black, the other parts ash-grey. Young with the plumage all dull black, except a broad band of dusky round the fore part of the body.

Male, $10\frac{1}{2}$, 39, 13, $2\frac{2}{12}$, $2\frac{1}{4}$, $1\frac{4}{12}$, $\frac{9}{12}$.

This species is very abundant in most parts of the northern and middle divisions of Scotland, and its islands, but becomes rarer as we advance southward. In many parts of England it is found only during winter. It feeds on crustacea, mollusca, fish, larvæ, worms, insects, young birds, small quadrupeds, and seeds; nestles in rocks and on trees, laying from four to six eggs, an inch and seven-twelfths long, an inch and one-twelfth in breadth, pale bluish-green, with oblong and roundish spots of greenish-brown and pale purplish-grey.

Grey-backed Crow. Grey Crow. Dun Crow. Bunting Crow. Royston Crow. Heedy Crow.

Corvus Cornix, Linn. Syst. Nat. i. 156.—Corvus Cornix, Temm. Man. d'Ornith, i. 109.—Corvus Cornix, Hooded Crow, MacGillivray, Brit. Birds, i. 529.

51. Corvus Frugilegus. Bare-faced Crow, or Rook.

Feathers of the fore part of the head and throat abraded; plumage black, splendent, with purple, blue, and green reflections, that of the neck blended, silky, steel-blue, purple, and green; the bill attenuated towards the tip. Young with the head entirely feathered, the plumage black, less glossy.

Male, $19\frac{1}{2}$, $38\frac{1}{4}$, $12\frac{3}{4}$, $2\frac{4}{12}$, $2\frac{1}{8}$, $1\frac{5}{12}$, $\frac{9}{12}$. Female, $18\frac{1}{2}$, 36.

The Rook is generally distributed, being common in all the cultivated and partially wooded districts of Britain and Ireland. Unlike the preceding species, it is gregarious, often forming vast flocks, which breed together in tall trees, the nestling places being termed rookeries. The nest is large, composed of sticks, and lined with fibrous roots, long straws, wool, and other substances. The eggs, four or five, an inch and ten-twelfths long, an inch and a quarter broad, light greenish-blue, blotched, clouded, spotted, dotted, or freckled with greyish-brown, greenish-brown, and light purplish grey. The young are hatched early in April. This species is more vermivorous than those above described, feeding chiefly on larvæ, earth-worms, and insects, occasionally on grain, potatoes, and other substances, and in very dry or snowy weather frequenting the sea-shore to feed on crustacea and mollusca,

or dead fish. It is easily tamed, and may be taught to imitate various sounds. The young are esteemed good eating, and about the time of leaving the nest afford a barbarous sport to urban as well as rustic shooters. They are fed chiefly with grubs, worms, and seeds, which are conveyed in quantity by their parents in a kind of sac at the base of the tongue. In some rookeries both young and old fly off in June, while in others they remain all the year. In the former case, they generally return for some days in autumn, and again absent themselves until spring.

Corvus frugilegus, Linn. Syst. Nat. i. 156.—Corvus frugilegus, Temm. Man. d'Ornith, i. 110.—Corvus frugilegus, Rook, MacGillivray, Brit. Birds, i. 535.

52. Corvus Monedula. Grey-necked Crow, or Jackdaw.

Bill rather shorter than the head, somewhat conical; plumage greyish-black, the hind neck light grey, the head anteriorly glossed with blue, the primary quills, alula, and tail with green, the secondary quills with purple. The young when fledged are of the same colours as the adult, the grey of the neck a little less pure, and the feathers in general not so glossy.

Male, 14½, 30, 10, 1¼, 1 9/12, 1 2/12, 7/12. Female, 14, 28.

More active and lively, with a clearer and shriller voice than the other species. Generally dispersed, inhabiting deserted buildings, steeples, towers, and high rocks, and breeding in these places, or in rabbit burrows. The eggs, from four to seven, an inch and five-twelfths long, an inch in breadth, bluish-white, with small, round, separated spots of dark brown and pale purplish. Although vigilant and suspicious, it often resides in towns, and picks up part of its food from the streets. It feeds on larvæ, worms, insects, seeds, and other matters. Like the other species, it is easily tamed, may be taught to speak, and has a propensity to carry away and conceal glittering articles.

Daw. Kae.

Corvus Monedula, Linn. Syst. Nat. i. 156.—Corvus Monedula, Temm. Man. d'Ornith. i. 111.—Corvus Monedula, Jackdaw, MacGillivray, Brit. Birds, i. 552.

GENUS XXIX. PICA. MAGPIE.

Bill about the length of the head, stout, straight, tapering, compressed toward the end; upper mandible with the

dorsal line slightly arched, toward the end declinate, the ridge narrow, the edges sharp, with a slight notch or sinus close to the tip, which is declinate, rather sharp, and projects a little. Mouth of moderate width; upper mandible concave within, and grooved; tongue oblong, narrow, emarginate and papillate at the base, flat above, horny, thin-edged, the point slit; œsophagus of moderate width; stomach elliptical, compressed, with the muscular coat thick, the cuticular lining dense, with prominent rugæ; intestine of moderate length and width; cœca small, cylindrical. Eyes of moderate size. Apertures of ears roundish and moderate. Nostrils roundish, rather large, covered by the reversed feathers. Head large, oblong, rather convex above; neck rather short; body ovate, compact; legs of moderate length, strong, tarsi anteriorly covered with eight scutella, posteriorly with two longitudinal plates, and sharp-edged; toes moderate, the outer adherent as far as the second joint; first comparatively large, lateral toes nearly equal, all with a few large scutella; claws strong, arched, compressed, acute, with an obscure groove on each side. Plumage full, soft, blended, and glossed; feathers on the head short; those at the base of the upper mandible linear, stiff, directed forwards, and covering a large portion of the bill; wings of moderate length, much rounded; the first quill very short, extremely narrow, falciform; the fourth and fifth longest; tail very long, graduated, of twelve broad, rounded feathers.

The Magpies closely resemble the Crows in the form of the bill, head, and feet; but differ in having the tail very elongated, and the wings shorter and more rounded. They reside in copses and woods, but search for food chiefly in open places in their vicinity, fly steadily, but with little speed, move on the ground by walking and leaping, and instead of the croak or caw of the crows, have generally a chattering kind of cry. They are omnivorous, vigilant, and cunning; nestle in high places, forming a bulky nest, and laying five or six spotted eggs. They occur on both continents, but are less numerous in America.

53. Pica Melanoleuca. Chattering Magpie.

Plumage of the head, neck, back, fore part of breast, and

abdomen, black; of the rest of the breast, and the outer scapulars white; tail very long, graduated, splendent with green and purple, as are the wings, the greater part of the inner web of the outer quills of which is white. Young similar to the old birds, but with the plumage less dense and glossy.

Male, 18, 24, $7\frac{3}{4}$, $1\frac{4}{12}$, $1\frac{1}{12}$, $1\frac{3}{12}$, $\frac{6}{12}$. Female, 17, 24.

This beautiful bird occurs in all the cultivated and wooded parts of Britain and Ireland. Its food consists of larvæ, worms, insects, mollusca, reptiles, eggs, young birds, small quadrupeds, carrion, sometimes grain and fruits of various kinds. Extremely shy and vigilant when molested, it is much less so in unfrequented places. It walks like the crows, but occasionally leaps in a sidelong direction, emits a chattering cry when alarmed, flies rather heavily, and nestles in trees or bushes, forming a large nest of twigs, covered over or arched, with an aperture on one side. The eggs, from three to six, an inch and five-twelfths long, eleven-twelfths and a half in breadth, pale green, freckled with umber-brown and light purplish-grey, but varying in their tints. Being very destructive to eggs and young birds, it is much persecuted. It is easily tamed, but is troublesome from its superabundant activity, and its propensity to carry off whatever object strikes its fancy.

Common Magpie. Pyet. Pianet. Mag. Madge.

Corvus Pica, Linn. Syst. Nat. i. 157.—Corvus Pica, and Garrulus Pica, Temm. Man. d'Ornith, i. 113, iii. 63.—Pica melanoleuca, Common Magpie, MacGillivray, Brit. Birds, i. 562.

GENUS XXX. GARRULUS. JAY.

Bill shorter than the head, straight, strong, compressed toward the end, rather pointed; upper mandible with the dorsal line declinate and slightly arched, the ridge narrow, the sides sloping, the edges direct, sharp, with a notch or sinus close to the tip, which is rather acute and declinate; lower mandible with the angle of moderate width, the dorsal line ascending and convex, the edges slightly inflected, the tip rather acute; gape-line nearly straight. Mouth of moderate width; upper mandible concave with five or seven prominent lines; tongue oblong, sagittate, flat above, horny and thin at the edges, the tip cleft and lacerated; œsophagus rather wide, nearly uniform; proventriculus bulbiform;

stomach oblong, with the muscular coat not very thick, the inner transversely rugous; intestine of moderate length; cœca very small, cylindrical. Nostrils round, covered by the reversed, shortish feathers. Eyes of moderate size, eyelids feathered. Aperture of ear roundish, of moderate size. Head rather large, oblong, convex above; neck short; body ovate, compact, or rather slender. Legs of moderate length; tarsi rather slender, compressed, with eight or ten scutella; posteriorly sharp with two longitudinal plates; toes of moderate size; the outer adherent at the base, the first large, the outer a little longer than the inner, all with large scutella; claws rather slender, arched, compressed, acute, the first with an obscure groove on the sides. Plumage very soft, blended; feathers at the base of the upper mandible linear, stiff, directed forwards, but much shorter than in the Crows; small decurved bristles; wings moderate, or rather short, the first narrow and about half the length of the fourth and fifth, which are longest; tail long, or moderate, rounded, or graduated, of twelve broad feathers.

The species of this genus are very numerous, and distributed over both continents. They are more properly frugivorous than omnivorous, feeding principally on seeds, nuts, and berries; but they also eat insects, larvæ, eggs, and young birds. They reside in woods and thickets, seldom frequenting exposed places; are shy, suspicious, and when alarmed, clamorous; nestle in trees and bushes, and lay from four to nine speckled eggs. This genus is allied to Pica and Corvus on the one hand, and to Turdus and Parus on the other.

54. Garrulus Glandarius. Blue-winged Jay.

Feathers of the fore part of the head elongated and erectile, wings of moderate length, tail rather long, nearly even; general colour of the plumage light brownish-red, fore part of the head whitish, spotted with black, of which there is a broad band on each side from the base of the bill, primary coverts and alula bright blue, banded with blackish-blue. Young similar to the adult, but with the plumage less firm, and the colours duller.

Male, $14\frac{1}{2}$, 23, $7\frac{1}{2}$, $1\frac{1}{12}$, $1\frac{11}{12}$, $1\frac{2}{12}$, $\frac{15}{24}$. Female, $13\frac{3}{4}$, 22.

Generally distributed in England and the wooded parts of

the southern and middle divisions of Scotland, as well as in Ireland. It feeds on worms, larvæ, snails, seeds, and fruits of various kinds, plunders the nests of small birds, and pounces on mice, and sometimes birds. The nest is built in a copse or hedge; the eggs, from five to seven, somewhat smaller, and of a broader form than those of the Magpie, are an inch and a quarter long, ten and a half twelfths broad, pale bluish-grey, or greyish, faintly freckled with yellowish-brown and pale purplish-grey. Its cry is harsh and varied, and it is said to imitate the notes of other birds.

Common Jay. Jay Pie. Jay Pyet.

Corvus Glandarius, Linn. Syst. Nat. i. 256.—Corvus Glandarius and Garrulus Glandarius, Temm. Man. d'Ornith. i. 114; iii. 65.—Garrulus Glandarius, Blue-winged Jay, MacGillivray, Brit. Birds, i. 576.

GENUS XXXI. NUCIFRAGA. NUTCRACKER.

Bill rather long, moderately stout, conical, slightly compressed, but with the tip depressed; upper mandible with the dorsal line almost straight, being but slightly arcuate, the ridge rather narrow, but convex, the sides very convex, the edges sharp, with a very obscure sinus close to the depressed, obtuse tip: lower mandible with the angle very short, the dorsal line ascending and slightly convex, the edges sharp and inflected, the tip rather blunt and a little depressed; gape-line very slightly arched. Nostrils rather small, round, concealed by the shortish reversed feathers. Eyes of moderate size, eyelids feathered. Aperture of the ear roundish, moderate. Head large, ovate; neck short; body compact: legs of moderate length; tarsi compressed, with eight or ten scutella, posteriorly sharp-edged, with two plates; toes of moderate size, the first large, the second a little shorter than the outer, which is adherent at the base, all with large scutella; claws long, arched, much compressed, acute. Plumage soft and blended; feathers on the head short; those at the base of the upper mandible linear, stiffish, directed forwards; no distinct bristles; wings of moderate length, much rounded, the first quill very short, the fourth longest, the fifth scarcely shorter; tail of moderate length, a little rounded.

This genus, of which only two species are known to me, forms the transition from the Crows to the Starlings.

55. Nucifraga Caryocatactes. Spotted Nutcracker.

Plumage dull reddish-brown, the upper part of the head, wing-coverts, quills, and tail, blackish-brown; all the feathers, excepting those of the head and the tail-coverts, with an oblong white spot, margined with dark brown, at the end; the spots of the lower parts larger; the lower tail-coverts and the tips of the tail-feathers white.

Male, $12\frac{1}{2}$, . ., $7\frac{1}{4}$, $1\frac{3}{4}$.

Although it is said to be common in many parts of the continent, living in the woods of the mountainous districts, it is of very rare occurrence in Britain, where it ranks only as an accidental straggler. It obtains its name from its alleged habit of splitting with its bill the shells of nuts and other hard fruits.

Corvus Caryocatactes, Linn. Syst. Nat. i. 157.—Nucifraga Caryocatactes, Temm. Man. d'Ornith. i. 117.—Nucifraga Caryocatactes, Nutcracker, MacGillivray, Brit. Birds, i. 583.

GENUS XXXII. FREGILUS. CHOUGH.

Bill rather long, slightly arched, rather slender, pentagonal at the base, tapering; upper mandible with the dorsal line slightly arched, the ridge obtuse, the sides flattened, the edges sharp, without notch, the tip slender, flattened, and projecting a little; lower mandible with the angle short, the dorsal line concave, the tip slender, rather acute; gape-line slightly arched. Mouth narrow; tongue slender, sagittate and papillate at the base, with the tip slit and lacerated; œsophagus of moderate width; stomach oblong, with the muscular coat moderately thick, the epithelium dense and rugous; intestine of moderate length and width; cœca very small, cylindrical. Eyes of moderate size. Aperture of ear roundish. Nostrils elliptical, concealed by the short, stiff, reversed feathers. Head of moderate size, ovate; neck rather long; body rather slender; tarsi rather short, compressed, anteriorly with eight scutella, posteriorly with two longitudinal plates, and thin-edged; toes of moderate size, the outer adherent at the base, the first large, the lateral nearly equal, all with large scutella; claws strong, arched,

compressed, rather acute, their sides flattened and erect. Plumage dense, very soft, glossy, blended; feathers of the head short; small decurved bristles; wings long; the first quill very short and narrow, the fourth longest; tail of moderate length, even, of twelve broad truncate feathers.

The Fregili, of which two species occur in Europe, inhabit rocks and towers, where they also nestle, and search the open pastures for worms and insects. They are gregarious, and resemble the Crows and Starlings in their habits.

56. Fregilus Graculus. Long-billed Chough.

Bill longer than the head, attenuated, and with the feet vermilion; plumage black, highly glossed, with purplish-blue and green tints; feathers of the head and neck blended; tail even, about the same length as the closed wings.

Male, 17, 34, $11\frac{3}{4}$, $2\frac{1}{4}$, $2\frac{2}{12}$, $1\frac{1}{4}$, $\frac{8}{12}$.

Occurs in flocks in various parts of England, Ireland, and Scotland, residing in maritime cliffs, and feeding in the pastures on worms, larvæ, insects, and occasionally seeds. Its note is loud and clear, its flight and mode of walking quicker than those of the Crows. It nestles in rocks or caves, laying five eggs, "of a dull white, sprinkled with light brown and ash-coloured spots, most at the larger end."

Chough. Cornish Chough. Cornish Daw. Cornwall Kae. Chauk Daw. Killigrew. Red-legged Crow.

Corvus Graculus, Linn. Syst. Nat. i. 158.—Pyrrhocorax Graculus, Temm. Man. d'Ornith. i. 122.—Fregilus Graculus, Long-billed Chough, MacGillivray, Brit. Birds, i. 587.

FAMILY XIII. GRACULINÆ. GRACULINE BIRDS, OR GRAKLES.

Assuming the genus Gracula of Cuvier as typical or characteristic of a group of birds, allied to the Crows on the one hand, and to the Thrushes on the other, I here substitute the family name of Graculinæ for that of *Thremmaphilinæ*, which I have elsewhere used to designate the same group. Several authors name these birds Sturnidæ, but the genus Sturnus seems to me to be one of the least characteristic. The student who confines his

observation to British Birds cannot, however, form a correct idea of this group, as only two species belonging to it occur with us.

The Graculinæ are inferior in size to the Corvinæ, which they, however, resemble in many respects. Their body is ovate, compact, moderately stout; the neck short; the head of ordinary size, ovato-oblong, rather flattened above. Bill about the length of the head or somewhat shorter, moderately stout or rather slender, nearly straight, somewhat conical, compressed; upper mandible with its dorsal line a little convex near the end, the ridge very narrow at the base, the nasal sinus very large, the edges sharp, with a slight or obsolete notch close to the slightly decurved tip; lower mandible with the angle long, the crura rather broad, the dorsal line nearly straight. Mandibles concave, with a medial prominent line; tongue sagittate, papillate at the base, concave above, horny and thin-edged toward the point, which is narrow and lacerated; œsophagus of moderate width, uniform; proventriculus oblong; stomach elliptical, its muscular coat thick, the cuticular lining dense and rugous; intestine of moderate length and width; cœca small, cylindrical, adnate. Eyes of moderate size; eyelids partially bare, with more or less bare skin behind or around them. Nostrils of moderate size, oval, with a horny operculum; the nasal membrane covered with short incurved feathers. Feet of moderate length; tarsus compressed, with seven anterior scutella, and two posterior plates, forming a thin edge; toes four, the first stout, about the same length as the second and fourth, which latter is adherent at the base, all with large scutella; claws rather long, arched, much compressed, their sides flat, with an obscure groove. Plumage moderately full; feathers at the base of the bill short, rather stiff, incurved; wings of moderate length, rather pointed; first quill extremely short, being scarcely a fifth of the length of the second, the third longest, the

second slightly shorter; tail of moderate length, of twelve feathers.

These birds, which are chiefly resident in the warmer regions of Asia and Africa, scarcely differ in the structure of the skeleton and digestive organs from the Crows. They are generally gregarious, feed on worms, larvæ, insects, and fruits, and breed in high places, or in holes and crevices. They are easily domesticated, may be taught to pronounce words, and to whistle tunes, most of them having naturally a modulated voice, and some being remarkable for their vocal powers.

GENUS XXXIII. THREMMAPHILUS. COWBIRD.

Bill of moderate length, or rather short, moderately stout, nearly straight, compressed toward the end; upper mandible with its dorsal line slightly declinate and convex, the ridge narrow at the base, the edges sharp, with a slight notch close to the slightly decurved tip; lower mandible with the angle long, the crura rather broad, the dorsal line straight, the edges sharp, the tip acute; gape-line ascending at the base, then direct. Eyes rather small; lower eyelid bare. Nostrils elliptical, oblique, open, with an arched horny operculum. Aperture of ear roundish, of moderate size. Head oblong; neck short; body moderate; feet rather stout; tarsus shortish, compressed, with seven anterior scutella, thin-edged behind; first toe stouter, second and fourth about equal; claws rather long, stout, moderately arched, compressed, obscurely grooved, acute. Plumage moderate; feathers on nasal groove very narrow, pointed, recurved; wings of moderate length, rather pointed, the first quill extremely small, being about a sixth of the length of the second, which is little shorter than the third; tail moderate, or rather short, slightly rounded.

The birds of this genus, which is peculiar to the Old Continent, are closely allied to the Starlings and Thrushes, insomuch that the only species which occurs in Britain has been referred by some to Sturnus, by others to Turdus.

They are said to follow cattle assiduously, and to feed on larvæ and insects, especially grasshoppers and locusts.

57. THREMMAPHILUS ROSEUS. ROSE-COLOURED COW-BIRD.

Male with the feathers of the head elongated; the plumage of the body pale rose-coloured, of the head and fore neck black, glossed with purple; wings and tail brownish-black, glossed with green. Female with the colours similar but duller, the crest inconspicuous. Young with the upper parts light brown, the feathers edged with white.

Male, 9, .., $5\frac{1}{4}$, $\frac{9}{12}$, $1\frac{2}{12}$, 1, $1\frac{4}{12}$.

This beautiful bird migrates irregularly into the south of Europe, and sometimes straggles into this country, it having repeatedly been obtained in England, and in a few instances in Scotland. According to Wagler, it lives on insects, especially locusts and grasshoppers, as well as on seeds of various kinds; often mingles with flocks of Starlings, and perching on the backs of cattle, extracts the larvæ of œstri; nestles in holes of trees and of old buildings, laying six eggs.

Rose-coloured Ouzel, Thrush, or Starling.

Turdus roseus, Linn. Syst. Nat. i. 294.—Pastor roseus, Temm. Man. d'Ornith. i. 136, iii. 76.—Thremmaphilus roseus, Rose-coloured Cow-bird, MacGillivray, Brit. Birds, i. 613.

GENUS XXXIV. STURNUS. STARLING.

Bill about the length of the head, straight, rather slender, tapering, pentagonal; upper mandible with its dorsal line straight until near the end, the ridge very narrow at first, then broad and convex, the edges sharp, with a very slight or obsolete notch close to the depressed tip; lower mandible with the crura rather broad at the base, and sloping outwards, the dorsal line straight, the tip narrow; gape-line ascending gently at the base, then direct. Mouth of moderate width; upper mandible concave, with a medial prominent line; tongue sagittate, of moderate length, papillate at the base, slender, horny and thin-edged toward the point, which is narrow and slightly lacerated; œsophagus of moderate width, uniform; stomach broadly elliptical, compressed, muscular, the cuticular lining rugous; intestine of moderate length and width; cœca small, cylindrical. Eyes rather

small, lower eyelids partly bare. Nostrils ovate, operculate. Head ovato-oblong, of moderate size; neck short; body compact; tarsus moderate, compressed, with seven anterior scutella, thin-edged behind; first toe stouter, lateral toes about equal; claws moderately stout, much compressed, laterally grooved, arched, acute. Plumage compact, splendent; feathers on the nasal sinus recurved, on the head and neck lanceolate; wings of moderate length, with the first quill very small and slender, the second slightly shorter than the third, which is longest; tail short, straight, emarginate, and slightly rounded.

The Starlings are of small size, gregarious, and insectivorous. They belong to the Old Continent, but are closely allied to the genus Sturnella, which is peculiar to America, and forms the transition to the conic-billed granivorous birds.

58. Sturnus guttatus. Spotted Starling.

Adult male with the feathers of the head and neck lanceolate and acuminate, of the other parts broader but tapering; the general colour black with splendent blue and purple tints; all the feathers, unless on the head and fore neck, with a triangular white spot at the tip; bill pale yellow; feet light reddish-brown. In spring the feathers more attenuated, their white tips diminished. Female with the feathers as in the male, but broader, and tipped with broader spots, of which those on the upper parts are light brown, on the lower white; bill dusky, feet reddish-brown. Young of a uniform greyish-brown colour; bill brownish-black, feet dusky.

Male, $9\frac{1}{4}$, $15\frac{1}{2}$, $5\frac{2}{12}$, $1\frac{1}{4}$, 1, $\frac{10}{12}$, $\frac{5}{12}$. Female, $9\frac{1}{4}$, $15\frac{1}{8}$.

The Starling is generally distributed in Britain, but local. It is nowhere more common than in the northern and western Isles of Scotland, where it breeds in caves, crevices of rocks, and holes in the turf. In more southern parts it nestles in hollow trees, old buildings, and rocks. The eggs, from four to six, are of a somewhat elongated oval form, glossy, of a very pale greenish-blue, an inch and a quarter long, ten-twelfths in breadth. It is gregarious, flies with considerable rapidity, walks and runs with ease, searches the pastures for worms, larvæ, and insects, is fond of attending cattle and sheep, on which it sometimes perches. Its song is pleasant, and when tamed it can be taught to whistle tunes, and even to imitate words.

Starling. Stare.

Sturnus vulgaris, Linn. Syst. Nat. i. 290.—Sturnus vulgaris, Temm. Man. d'Ornith, i. 132, iii. 74.—Sturnus guttatus, Spotted Starling, MacGillivray, Brit. Birds, i. 595.

There is no essential difference, as to the structure of the skeleton and digestive organs, between the Corvinæ and Graculinæ, above described, and the group of birds on which we now enter. It appears, however, advisable to keep them apart, for the purpose of facilitating investigation. Those about to be described are all of small size, with the bill slender, and adapted for seizing insects, worms, or soft fruits. They thus differ from the Vagatrices, which have the bill more elongated and stronger; and from the Deglubitrices, in which it is short, stout, and conical. On account of their being pre-eminently musical, we may name them Cantatrices.

ORDER VII. CANTATRICES. SONGSTERS.

Birds of small size, having the body ovate and rather compact; the neck short; the head rather large, and ovate. Bill never longer than the head, nearly straight, slender, or moderately stout, compressed, tapering, pointed; upper mandible with the basal sinuses moderate, filled by a membrane covered by short soft feathers, the dorsal line somewhat convex toward the end, the edges sharp, with a notch or sinus close to the narrow declinate tip; lower mandible with the angle moderate, the dorsal line slightly convex, the edges direct, the tip acute. Mouth of moderate width; tongue short or moderate, narrow, flat, emarginate and papillate at the base, thin-edged, with the point slit or lacerated; œsophagus narrow, without dilatation; proventriculus oblong; stomach roundish, or broadly

elliptical, compressed ; its muscular coat thick, and forming two distinct lateral muscles, its cuticular lining dense, tough, and slightly rugous ; intestine short, rather wide ; cœca very small, cylindrical, adnate ; rectum with an elliptical dilatation. Eyes of moderate size. Nostrils oblong, or linear, direct. Aperture of ear large, roundish. Legs of ordinary length, or short ; tarsus much compressed, with about seven anterior scutella, and two longitudinal plates behind ; toes four, compressed, the three anterior slightly spreading ; the first stouter, the lateral about equal, the third and fourth adnate at the base, all scutellate ; claws rather long, arched, slender, compressed, laterally grooved, tapering to a fine point. Wings of moderate length, broad, with the first quill extremely small, sometimes wanting, the third and fourth longest ; tail of twelve feathers.

The Cantatrices are remarkable for their finely modulated song. Their trachea is nearly uniform, with four pairs of inferior laryngeal muscles, but does not differ from that of the Vagatrices or Deglubitrices. Species occur in all parts of the globe. Their food consists chiefly of insects, larvæ, worms, mollusca, and soft fruits. They generally advance by leaping, although some run ; but none walk in the sedate manner of the Vagatrices. Their flight is generally rapid, light, and undulated. In summer they are unsocial, in winter often gregarious. Very many are migratory, being unable to procure subsistence in cold climates in winter. They may be arranged into several groups, of which those that have representatives with us are the Oriolinæ, Myrmotherinæ, Turdinæ, Saxicolinæ, Sylviinæ, Motacillinæ, Alaudinæ, Ampelinæ, and Parinæ. These groups differ only in circumstances of little essential importance, their internal organization

being very similar; and, therefore, it will suffice to give their principal characters, especially as we have very few species of most of them.

FAMILY XIV. ORIOLINÆ. ORIOLINE BIRDS, OR ORIOLES.

Bill rather long, stout, nearly straight, rather broad at the base, compressed toward the end; upper mandible with the dorsal line slightly arched, the ridge narrow, the edges sharp, with a slight notch close to the small deflected tip; lower mandible with the angle of moderate length, the sides nearly erect, the edges sharp, the dorsal line nearly straight, the tip acute. Mouth of moderate width; tongue slender, emarginate and papillate at the base, thin and horny toward the tip, which is bifid. Nostrils oblong. Head oblong, of moderate size; neck rather short. Tarsus short, or moderate, compressed, with seven anterior scutella; toes of moderate size, with large scutella, the first stout, the fourth a little longer than the second, and united at the base to the third; claws of moderate length, arched, compressed, laterally grooved, acute. Plumage generally blended; short bristles; wings rather long, the first quill scarcely half the length of the third, which is longest; tail rather long, straight, slightly rounded.

The Oriolinæ belong to the warmer regions of the Old Continent.

GENUS XXXV. ORIOLUS. ORIOLE.

Bill rather long, stout, nearly straight, as broad as high at the base; upper mandible with the ridge narrow, the sides sloping at the base. Tarsus short, compressed, with seven distinct scutella; toes of moderate size, the anterior little spreading, being united at the base; claws of ordinary length, arched, acute. Wings rather long, the first quill short, the third and fourth longest; tail of moderate length, straight, rounded.

The Orioles appear to be allied to the Rollers; not only the form of their bill, but also their short tarsi and broad toes indicating this affinity. They belong to Africa, the warmer parts of Asia, and New Holland. One species appears in Britain, as an occasional or accidental visitor.

59. Oriolus Galbula. Golden Oriole.

Male with the plumage bright yellow, the wings black, the primary coverts and all the quills excepting the first and second, tipped with yellow; the tail-feathers black, tipped with yellow, the space of the latter colour enlarging from the medial to the lateral feathers; the loral space black. Female greenish-yellow above, yellowish-white beneath, marked with longitudinal dusky lines; wings and tail brown, tipped with yellow. Young dusky yellowish, grey above, each feather with the centre olive-brown; yellowish-white beneath, with linear brown streaks.

Male, $9\frac{1}{2}$, .., $6\frac{2}{12}$, $1\frac{1}{12}$, 1, $\frac{9}{12}$, $\frac{6}{12}$. Female, $9\frac{3}{12}$.

The Golden Oriole is said to arrive in the south of Europe about the end of spring, and to extend over France and many parts of Germany, but to be rare in the northern countries. It has occurred in several counties in England, and in a few instances in Ireland.

Oriolus Galbula, Linn. Syst. Nat. i. 160.—Oriolus Galbula, Temm. Man. d'Ornith. i. 129.—Oriolus Galbula, Golden Oriole, MacGillivray, Brit. Birds, ii. 73.

FAMILY XV. MYRMOTHERINÆ. MYRMOTHERINE BIRDS, OR ANTCATCHERS.

The birds of this family are distinguished from the Thrushes chiefly by their shortened form. Bill rather short, moderately stout, straight, with the dorsal line convexo-declinate, the tip narrow, the edges of the upper mandible slightly notched near the end. Mouth of moderate width. Feet rather long and stoutish; tarsus compressed, with large distinct scutella; toes of moderate size, the first stouter, and nearly as long as the second, the fourth a little longer, and united at the base; claws moderate, arched, compressed, laterally grooved, acute. Wings

short, broad, concave, rounded; the first quill very short and narrow, the second and third longest; tail always short, convex above, even or rounded.

The Myrmotherinæ belong chiefly to the warmer regions of the globe; but the genus to which is referred the only British species, is composed of birds that inhabit cold and temperate countries.

GENUS XXXVI. CINCLUS. DIPPER.

Bill rather short, slender, compressed, slightly bent upwards, much compressed toward the end; the edges sharp; an obscure notch close to the narrow, slightly deflected tip. In old birds, the tip worn, so as to obliterate the notches, and render the extremity abrupt and somewhat wedge-shaped. Mouth very narrow; tongue sagittate, narrow, grooved, bristly on the margins, toward the end, and terminating in two bristle points; œsophagus of nearly uniform width; stomach roundish, compressed, muscular, its epithelium dense and rugous; intestine of moderate length and width; cœca very small, cylindrical. Nostrils linear, direct. Eyes rather small, eyelids densely feathered. Aperture of ear roundish, of moderate size. Head oblong, rather small, compressed; neck rather short, body full; tarsus of moderate length, compressed, rather stout, covered anteriorly by a long undivided plate, and four anterior scutella, posteriorly sharp, with two long plates; toes rather large, the first, second, and fourth nearly equal, the anterior connected by basal webs; claws rather long, arched, much compressed, laterally grooved, in old birds blunted. Plumage rather compact, on the fore part of the head short, blended; no bristles; wings rather short, broad, convex, rounded; the first quill very short, the third longest; tail short, even, slightly decurved.

The birds of this genus are placed on the limits of the family, and are nearly as much allied to the Thrushes. They are remarkable for their habit of procuring their food at the bottom of streams.

60. Cinclus europæus. European Dipper.

Head and hind neck deep-brown, both eyelids with a white

speck, upper parts dark grey, the feathers broadly margined with black, throat and fore neck white, breast brownish-red, quills and tail dark brown tinged with grey. Young with the upper parts all grey, the feathers margined with black, fore neck and breast white, undulated with dusky.

Male $7\frac{3}{4}$, $12\frac{1}{4}$, $3\frac{3}{4}$, $\frac{9}{12}$, $1\frac{2}{12}$, $\frac{11}{12}$, $\frac{4}{12}$. Female, $7\frac{1}{4}$, 12.

The Dipper is generally distributed in Britain, but is much more plentiful in Scotland. It frequents running waters, perches on stones or on the banks, descends to the bottom in search of its food, which consists of mollusca and insects, has a rapid, direct flight, and is of a rather solitary disposition. The nest, which is placed near the water, is of enormous size, arched over, but broader than high, with the aperture in front, and composed externally of moss, internally of grass, and lined with beech or oak leaves. The eggs, five or six, oval, rather pointed, pure white, about an inch in length, nine-twelfths in breadth. The young, when nearly fledged, on being disturbed, leave the nest, and plunge into the water.

Water Ouzel. Water Crow. Water Piet. Dipper. Ducker. Kingfisher.

Sturnus Cinclus, Linn. Syst. Nat. i. 290.—Cinclus aquaticus, Temm. Man. d'Ornith, i. 177.—Cinclus europæus, European Dipper, MacGillivray, Brit. Birds, ii. 50.

FAMILY XVI. TURDINÆ. TURDINE BIRDS, OR THRUSHES.

Body moderate; neck rather short; head oblong, compressed. Bill shortish or moderate, rather strong, straight, compressed toward the end; upper mandible with the dorsal line a little convex and declinate, the edges sharp, with the notches small, the tip declinate, rather acute; lower mandible with the angle of moderate length, the dorsal line ascending and slightly convex, the tip narrow. Nostrils oblong, operculate, nasal sinus feathered. Eyes of moderate size, eyelids feathered. Aperture of ear large, roundish. Mouth of moderate width; tongue sagittate, slender, tapering, its edges thin and bristly, the tip slit; œsophagus rather narrow, uniform; proventriculus oblong; stomach a gizzard of moderate strength, its

muscles distinct; intestine of moderate length ; cœca very small, cylindrical. Tarsus moderate or rather long, compressed, with seven scutella ; toes rather strong, compressed ; the first stronger, the lateral nearly equal, the third and fourth united at the base ; claws rather long, arched, compressed, laterally grooved, acute. Plumage ordinary, rather blended, the feathers rounded ; short bristles ; wings of moderate length, broad, rounded ; the first quill very small, the third and fourth longest ; tail moderate or long.

The Turdinæ, of which species occur in all countries, feed on insects, worms, and soft fruits, for which they search the open pastures, generally repose in the thickets and woods, have a moderately rapid, somewhat undulated flight, and on the ground advance by leaping. The nests are cup-shaped, and neatly constructed ; the eggs five or six. Many of the species are remarkable for their superiority of song.

GENUS XXXVII. TURDUS. THRUSH.

Bill of moderate length, rather slender, straight, compressed ; upper mandible with the ridge rather narrow, the dorsal line slightly arched, the sides convex, the edges sharp, with an obscure notch close to the small, rather obtuse tip ; lower mandible with the angle moderate, the dorsal line convex, the tip rather acute ; gape-line nearly straight. Mouth rather narrow ; upper mandible internally narrow, with a medial prominent line ; tongue sagittate and papillate at the base, tapering, slender, concave above, thin-edged, bristled, with the point slit ; œsophagus rather narrow, uniform ; stomach broadly oblong, compressed, its muscular coat rather thick, with distinct muscles, the epithelium dense, longitudinally rugous ; intestine of moderate length and width ; cœca very small, cylindrical. Nostrils elliptical, direct, in the lower and fore part of the nasal membrane, which is feathered. Eyes of moderate size, eyelids feathered. Aperture of ear rather large, roundish. Head oblong, of moderate size ;

neck ordinary; body compact; legs rather slender; tarsus moderate, compressed, anteriorly with a long plate and four scutella, posteriorly with two longitudinal plates; toes of moderate length, with large scutella; the third and fourth slightly connected at the base, the lateral about equal; claws slender, compressed, laterally grooved, arched, acute. Plumage rather blended; short basirostral bristles; wings of ordinary length or rather long, rounded; first quill extremely small, third and fourth longest; tail moderate, or rather long, slightly emarginate.

The Thrushes feed on worms, larvæ, insects, mollusca, soft fruits and seeds. Their mode of progression on the ground is by leaping, their flight moderately rapid, and somewhat undulatory. They are remarkable for the mellowness of their song. Seven species, of which three are resident, occur in Britain.

61. Turdus Merula. Black Thrush, or Blackbird.

Male with the bill yellow, the feet dusky, the plumage black. Female with the bill and feet dusky, the plumage deep brown above, lighter beneath, the throat and fore neck pale brown, streaked with darker. Young dusky-brown above, with dull yellowish streaks, yellowish-brown above, spotted with dusky.

Male, $10\frac{3}{4}$, 16, $5\frac{5}{12}$, $\frac{10}{12}$, $1\frac{3}{12}$, 1, $\frac{5}{12}$. Female, 10, 15.

The Blackbird occurs in all the wooded and cultivated tracts of England, Scotland, and Ireland, in winter frequenting the neighbourhood of houses and towns, resorting to woods, hedges, and gardens, and feeding upon snails, worms and seeds. Its flight is steady, but along the hedges wavering and fitful. It has a loud chuckling cry, and mellow, loud, clear song, which continues from the beginning of spring to the middle of July. The nest is bulky, composed of grass, moss, and other materials, lined with mud, within which is a layer of fibrous roots, grass, and sometimes leaves. The eggs, generally five, are pale bluish-green, freckled with pale umber, but vary in colour and form; their average length an inch and a twelfth, their breadth ten-twelfths. Permanently resident.

Ouzel. Garden Ouzel. Merle.

Turdus Merula, Linn. Syst. Nat. i. 295.—Turdus Merula, Temm. Man. d'Ornith. i. 168, iii. 90.—Turdus Merula, Black Thrush, or Blackbird, MacGillivray, Brit. Birds, ii. 81.

62. Turdus torquatus. White-breasted Thrush, or Ring-ouzel.

Male with the bill yellow, the feet olive-brown, the plumage blackish-brown, the feathers margined with grey; a broad semilunar patch of white on the fore part of the breast. Female similar, but of a duller and lighter tint, with more grey on the wings, the white band tinged with brown. Young dusky, the feathers of the upper parts tipped with black, of the lower barred with yellowish-white.

Male, $11\frac{1}{2}$, 19, $5\frac{3}{12}$, $\frac{1}{2}$, $1\frac{6}{12}$, $1\frac{1}{12}$, $\frac{2}{24}$. Female, $10\frac{1}{2}$, 18.

This species, which arrives in April, and departs in October, betakes itself to the hilly and mountainous districts of England, Scotland, and Ireland. It feeds on worms, snails, insects, and berries; forms a nest like that of the Blackbird, and lays from four to six eggs, which are pale bluish-green, freckled all over with pale brown.

Ring Ouzel. Rock Ouzel. Tor Ouzel. Mountain Ouzel or Blackbird. Moor Blackbird. White-breasted Blackbird.

Turdus torquatus, Linn. Syst. Nat. i. 296.—Turdus torquatus, Temm. Man. d'Ornith. i. 166.—Turdus torquatus, Ringed Thrush or Ring Ouzel, MacGillivray, Brit. Birds, ii. 100.

63. Turdus Pilaris. Chestnut-backed Thrush, or Fieldfare.

Head, hind-neck, and rump, grey; fore part of the back chestnut; space before the eye brownish-black; a whitish line over the eye; fore neck and breast reddish-yellow; the feathers tipped with a brownish-black elongated triangular spot; those of the sides with large dusky spots and margined with white; lower wing-coverts and axillar feathers pure white. Young of the year with duller tints, the feathers of the sides light, with a pale brown or dusky border within the white margin.

Male, $10\frac{3}{4}$, $17\frac{1}{2}$, $5\frac{3}{4}$, $\frac{9}{12}$, $1\frac{1}{4}$, $\frac{11}{12}$, $\frac{2}{24}$. Female, $10\frac{1}{2}$, $16\frac{1}{2}$.

The Fieldfare arrives from the north of Europe in the end of October, and returns in the end of April. It is generally dispersed in large flocks, and feeds on worms, snails, insects, and berries, as well as seeds. It roosts on the ground, as well as on trees. In form it closely resembles the Black-bird, but in colour is more allied to the species which follow.

Feltyfare. Feldyfar. Feltyflier. Grey-Thrush.

Turdus pilaris, Linn. Syst. Nat. i. 291.—Turdus pilaris, Temm. Man. d'Ornith. i. 163.—Turdus pilaris, Chestnut-backed Thrush or Fieldfare, MacGillivray, Brit. Birds, ii. 105.

64. TURDUS VISCIVORUS. MISSEL THRUSH, OR SHRITE.

Upper parts light brown, tinged with grey, the fore part of the head greyish, the rump shaded with ochre-yellow; secondary coverts and tail-feathers tipped with greyish-white, a cream-coloured band from the base of the bill over the eye, the loral space greyish-white; the lower parts yellowish-white, each feather tipped with a black spot; the spots on the neck triangular, those on the breast larger and transversely oblong; the lower wing-coverts and axillar feathers white.

Male, $11\frac{1}{2}$, $19\frac{1}{2}$, $6\frac{1}{2}$, $\frac{10}{12}$, $1\frac{3}{12}$, $\frac{11}{12}$, $\frac{9}{24}$. Female, 11, 19.

Permanently resident; but flocks arrive in October and depart early in May. Common in England, Scotland, and Ireland. Gregarious in winter, feeding in the open fields, on worms, larvæ, and seeds. Nestles in bushes or on trees; the nest bulky, plastered internally with mud, and lined with roots, grass, and moss; the eggs, four or five, an inch and three-twelfths long, ten-twelfths in breadth, flesh-coloured or purplish-white, with scattered spots of light brownish-red and pale purplish-red. Its song resembles that of the Blackbird, but its notes are less mellow and modulated.

Mistle Thrush. Grey Thrush. Holm Thrush. Screech Thrush. Storm-cock.

Turdus viscivorus, Linn. Syst. Nat. i. 291.—Turdus viscivorus, Temm. Man. d'Ornith. i. 161.—Turdus viscivorus, Missel Thrush, or Shrite, MacGillivray, Brit. Birds, ii. 114.

65. TURDUS MUSICUS. SONG THRUSH, OR MAVIS.

Upper parts yellowish-brown, the head tinged with red; secondary coverts and first row of small coverts tipped with reddish-yellow; fore part of neck and breast yellowish, each feather terminated by a triangular brownish-black spot; lower wing-coverts reddish-yellow. Young with the feathers of the back and wings streaked and tipped with ochre-yellow.

Male, 9, 14, $4\frac{7}{12}$, $\frac{9}{12}$, $1\frac{3}{4}$, $\frac{10}{12}$, $\frac{7}{24}$. Female, $8\frac{1}{2}$, 12.

Generally distributed in Britain and Ireland, occurring even in the bare northern isles, as well as in the wooded and cultivated parts. It is permanently resident; feeds on worms, insects, snails, and berries; becomes somewhat gregarious in winter. The song of this species surpasses that of the other British Thrushes. Its nest is lined with cow-dung, or particles of decayed wood, or mud, without any covering. The eggs, generally five, are bright bluish-green, with scattered roundish spots of brownish-black; their length about an inch, their breadth nine-twelfths.

Thrush. Throstle. Mavis.

Turdus musicus, Linn. Syst. Nat. i. 292.—Turdus musicus, Temm. Man. d'Ornith. i. 164.—Turdus musicus, Song Thrush, or Mavis, MacGillivray, Brit. Birds, ii. 127.

66. TURDUS ILIACUS. RED-SIDED THRUSH, OR REDWING.

Upper parts deep hair-brown, inclining to olive; a blackish-brown spot before the eye, a large whitish band over it; secondary coverts tipped with greyish-white; fore part of neck and breast white, with longitudinal streaks of blackish-brown and pale brown; middle of the sides and lower wing-coverts light red.

Male, $8\frac{3}{4}$, 14, $4\frac{1}{2}$, $\frac{7}{12}$, $1\frac{2}{12}$, $\frac{10}{12}$, $\frac{11}{24}$. Female, $8\frac{1}{4}$, $13\frac{1}{2}$.

Arrives from the north in the end of October, and departs in the beginning of May. Gregarious, frequenting the open fields, where it feeds on worms and larvæ; and during snow, betakes itself to the hedges and thickets, to eat the hawthorn and holly berries. It roosts on trees, flies with rapidity, and is generally shy and vigilant.

Wind Thrush. Swinepipe.

Turdus iliacus, Linn. Syst. Nat. i. 292.—Turdus iliacus, Temm. Man. d'Ornith. i. 165.—Turdus iliacus, Red-sided Thrush, or Redwing, MacGillivray, Brit. Birds, ii. 141.

67. TURDUS VARIUS. VARIEGATED THRUSH.

Bill large; wings of moderate length, with the second and sixth quills equal, the fourth longest, but the third and fifth scarcely shorter; tail even; upper parts yellowish-brown, lighter behind, lunulated with brownish-black; loral space and throat white; sides and lower fore part of the neck, breast, and sides of the body yellowish-white, lunulated with brownish-black.

Adult, $10\frac{3}{4}$, .., $5\frac{8}{12}$, $1\frac{1}{12}$, $1\frac{9}{12}$, $\frac{10}{12}$, $\frac{4}{12}$.

The bill of this species being a little larger, and its wings a little shorter than those of some others, it has been proposed to separate it generically under the name of *Oreocincla*, or Mountain Thrush. It was found by Dr Horsfield in the forests of a mountain in Java, and is said to occur in various parts of India, Japan, and Australia. Mr Yarrell states, that a specimen shot in the New Forest, Hampshire, appears to be identical with Dr Horsfield's *Turdus varius*, and his description agrees in all essential respects. Why, then, does he name this Hampshire bird *Turdus Whitei?* Another Thrush, shot by the Earl of Malmesbury, at Heron Court, near Christ-

church, although generally similar, differs in the form of the wing, and is said to agree with a Hamburgh specimen figured and described by Mr Gould under the name of *Turdus Whitei*. Not having examined these two specimens, I cannot decide upon their identity or dissimilarity. M. Temminck holds them to be the same; but in very many instances he has made similar assertions, and yet afterwards altered his mind.

Turdus varius, Horsf. Zool. Res. in Java.—Turdus Whitei, White's Thrush, Eyton, Rarer Brit. Birds, 92.—Turdus varius seu Whitei (Gould), Temm. Man. d'Ornith. iv. 602.—Turdus varius, Variegated Thrush, MacGillivray, Brit. Birds, ii. 146.

FAMILY XVII. SAXICOLINÆ. SAXICOLINE BIRDS, OR STONECHATS.

Body rather compact; neck short; head rather large, broadly ovate, anteriorly convex. Bill rather short, straight, slender, tapering, depressed at the base, compressed toward the end; upper mandible with the tip slender, slightly decurved, the notches obsolete. Tongue of moderate length, slender, emarginate and papillate at the base, horny toward the end, with the edges lacerate, and the tip slit; œsophagus of nearly uniform width; stomach of moderate size, roundish or elliptical, compressed, its lateral muscles rather thick, the cuticular lining tough, thin, and longitudinally rugous; intestine of moderate length and width; cœca very small, oblong. Legs of moderate length; tarsus slender, compressed, anteriorly covered with a long plate, in which the divisions of the scutella are sometimes distinctly marked; toes moderate, compressed, scutellate, the first strong, the lateral equal; claws rather large, arched, compressed, acute. Plumage blended; bristles small; wings of moderate length, broad; the first quill small, the next three longest, the last three secondaries gradually shorter; tail of moderate length.

The Saxicolinæ, being intimately allied to the Turdinæ, Alaudinæ, and Sylviinæ, present no abrupt and decided characters, by which they can be easily defined. They

reside chiefly in stony places and open pastures, especially those covered with small shrubs, but some frequent woods and thickets. On the ground they advance by hopping; their flight is moderately rapid; they feed on insects and worms; form large nests, lined with soft materials, and lay five or more eggs, generally blue. Most of them are migratory.

GENUS XXXVIII. ACCENTOR. CHANTER.

Bill short, straight, somewhat conical, slender, a little broader than high at the base, compressed toward the end; upper mandible with its dorsal line declinate and nearly straight, the ridge narrow at the base, then convex and somewhat flattened, the edges with a very slight notch close to the slightly declinate, narrow, and rather obtuse tip; lower mandible with the edges involute. Mouth rather narrow; tongue short, sagittate, narrow, terminated by two acute points; œsophagus of moderate and nearly uniform width; proventriculus oblong; stomach rather large, roundish-elliptical, compressed, its lateral muscles thick, the cuticular lining dense and longitudinally rugous; intestine of moderate length and width; cœca very small, oblong. Eyes of moderate size. Nostrils longish, linear, in the fore part of the large nasal sinus, of which the membrane is bare anteriorly. Aperture of ear large, roundish. Head rather small, ovate; neck short; body ovate. Legs of ordinary length, rather slender; tarsus compressed, with seven anterior scutella; toes of moderate length, much compressed; the first large, the lateral nearly equal, the third and fourth united at the base, all scutellate; claws rather long, arcuate, much compressed, laterally grooved, acute. Plumage soft, blended, slightly glossed; no distinct bristles; wings rather short, broad, much rounded, of eighteen quills; the first very small, the fourth and fifth longest; tail rather long, slightly arcuate, rounded.

This genus is intimately allied to Turdus, Sylvia, and Saxicola, from which it differs chiefly in the involution of the edges of the lower mandible. The stomach being very muscular, the species are partly granivorous.

68. Accentor alpinus. Alpine Chanter.

Light brownish-grey; the back with large dusky spots, the wing-coverts dusky, with a terminal white spot; throat white, with small triangular black spots, sides brownish-red; bill dusky, lower mandible yellowish-white for three-fourths of its length. Female similar to the male.

Male, 7, .., $3\frac{3}{12}$, $1\frac{5}{12}$, $1\frac{1}{12}$, $\frac{8}{12}$, $\frac{3}{12}$.

Of frequent occurrence in the mountainous parts of the south of Europe. Three individuals have been shot in England; the first, in November 1822, in the garden of King's College, Cambridge, and now in Dr Thackery's collection. Its food consists of insects and seeds, and it breeds in rocky places, laying five light greenish-blue eggs. In its habits it resembles the next species.

Alpine Accentor. Collared Starling.

Motacilla alpina, Gmel. Syst. Nat. i. 806.—Accentor alpinus, Temm. Man. d'Ornith, i. 248.—Accentor alpinus, Alpine Chanter, MacGillivray, Brit. Birds, ii. 258.

69. Accentor modularis. Hedge Chanter.

Upper part of the head and neck grey, streaked with brown; back reddish-brown, with dark brown spots; fore neck and breast dull ash-grey, sides streaked with brown; upper mandible brownish-black, lower flesh-coloured, with the tip dusky; feet brownish-yellow, toes darker, claws wood-brown. Female similar, but with the grey of the neck and breast duller and tinged with brown, and the rump more olivaceous. Young with the upper parts confusedly mottled with dusky and light brownish-red, the lower parts light yellowish-grey, streaked with dusky.

Male, $6\frac{1}{4}$, $8\frac{3}{4}$, $2\frac{7}{12}$, $2\frac{10}{12}$, $\frac{5}{12}$, $\frac{15}{24}$, $\frac{2}{12}$. Female, 6, $8\frac{1}{2}$.

This plainly coloured, modest, quiet, and familiar bird is generally distributed in Britain and Ireland, frequenting gardens, hedges, and thickets. The male sings occasionally, in fine weather, even in winter; but in the latter half of spring especially, may be heard chanting its short, clear, pleasantly modulated, but not remarkably mellow song. At all seasons, it has a peculiar shake of the wings, which, during the breeding period, increases to a kind of flutter. It feeds on small seeds of various kinds, as well as insects, pupæ, and larvæ, using a great quantity of minute fragments of quartz and other hard minerals. The nest, which is formed from the middle of March to the beginning of May, is bulky, lined with wool and

hair, and generally placed in a hedge or bush. The eggs, five or six in number, are greenish-blue, oval, rather pointed, nine or ten twelfths long, seven-twelfths in breadth. There are generally two broods in the season. The eyelids and base of the bill are frequently affected with tubercular excrescences, apparently of a carcinomatous nature.

Hedge Sparrow. Hedge Warbler. Dunnock. Dick-Dunnock. Shuffle-wing.

Motacilla modularis, Linn. Syst. i. 329.—Accentor modularis, Temm. Man. d'Ornith. i. 249.—Accentor modularis, Hedge-Chanter, MacGillivray, Brit. Birds, ii. 251.

GENUS XXXIX. ERITHACUS. REDBREAST.

Bill rather short, straight, slender, broader than high at the base, compressed toward the end; upper mandible with its dorsal line slightly convexo-declinate, the ridge rather obtuse, the notches small but distinct, the tip narrow and abruptly rounded; lower mandible with the dorsal line ascending and slightly convex, the tip acute. Mouth narrow; tongue oblong, sagittate and papillate at the base, a little concave above, the tip rounded and lacerated; œsophagus of moderate width, nearly uniform; proventriculus oblong; stomach of moderate size, roundish-elliptical, with strong lateral muscles, large tendons, and dense longitudinally rugous epithelium; intestine of moderate length and width; cœca very small, cylindrical. Eyes of moderate size. Nostrils longish, linear, straight, in the fore part of the rather large nasal sinus, which is feathered in the greater part of its extent. Aperture of ear, large, roundish. Head of moderate size, oblong; neck short; body ovate. Legs longish, slender; tarsus much compressed, anteriorly with a long undivided piece and three inferior scutella; toes of moderate size, much compressed; the first stout, the lateral about equal; claws of ordinary length, arcuate, extremely compressed, laterally grooved, acute. Plumage full, soft, blended; basirostral bristles pretty long; wing short, broad, concave, much rounded, of eighteen quills, the first half the length of the second, the fourth longest; tail of moderate length, slightly decurved, nearly even.

The form of the bill is very similar to that of the Thrushes, to which the Robins are closely allied in habits. They fre-

quent woods, thickets, and gardens, but feed chiefly on the ground, where they hop with their wings depressed, and the tail horizontal.

70. Erithacus Rubecula. Robin Redbreast.

Upper parts olive-green, the quills and tail-feathers greyish-brown, the outer secondary coverts with a small brownish-yellow spot at the tip; anterior part of forehead, loral space, sides of the head, fore neck, and anterior part of the breast, yellowish-red; a line of ash-grey over the eye and down the side of the neck. The female differs only in having the red on the neck somewhat paler, and the upper parts tinged with grey. The young have the upper parts dusky olive with a spot of dull orange on each feather, the secondary coverts largely tipped with dusky orange, the lower parts brownish-yellow, the tips and edges of the feathers dark brown.

Male, $5\frac{6}{12}$, 9, $2\frac{10}{12}$, $\frac{5}{12}$, 1, $\frac{10}{12}$, $\frac{3}{12}$. Female, $5\frac{1}{2}$, 9.

The lively, pert, pugnacious, and cheerful Robin occurs in all the wooded and cultivated parts of the country, frequenting the neighbourhood of houses during winter. It has a short, rapid, direct flight; on the ground hops, stands, and starts forward, in the manner of the Thrush; feeds on worms and insects, berries, and farinaceous substances. Its song is lively, clear, and mellow. The nest, which is placed under a hedge, bush, or tuft of herbage, on the ground, or on a mossy bank, is bulky, composed of various materials, lined with hair and wool. The eggs, five or six, are of a regular oval form, nine and a half twelfths in length, seven and a fourth twelfths in breadth, reddish-white, faintly freckled with light purplish-red. Individuals sometimes enter houses in winter, and on being caught, soon become familiar. Its blood has a singularly nauseous and bitter taste. The Robin is a privileged bird, spared even by Cockney sportsmen, every one looking on him as a friendly and pleasant little fellow, whose company is never tiresome. I have heard of a closet naturalist who, slighting the labours of a brother of the field, alleged that he could pen a volume on the Robin; but surely, if confined to the subject, written in the manner of the Classification of Birds in Lardner's Cyclopædia, and without the aid of fable, it would prove a duller book than Robinson Crusoe.

Robin. Redbreast. Robinet. Ruddock.

Motacilla Rubecula, Linn. Syst. Nat. i. 337.—Sylvia Rubecula, Temm. Man. d'Ornith. i. 215.—Erithacus Rubecula, Robin Redbreast, MacGillivray, Brit. Birds, ii. 263.

GENUS XL. FRUTICICOLA. BUSHCHAT.

Bill short, straight, slender, depressed at the base, compressed toward the end; upper mandible with its dorsal line declinate, and nearly straight, the ridge narrow at the base, and continuing rather sharp to the end, the notches small, the tip narrow, deflected, rather acute; lower mandible with the angle moderate, the dorsal line nearly straight, the edges inflected, the tip narrowed to a blunt point; the gape-line straight. Mouth rather wide; tongue short, sagittate, emarginate and papillate at the base, rather narrow, concave above, bristly on the edges, with the tip slit; œsophagus of moderate width, nearly uniform; proventriculus oblong; stomach of moderate size, roundish-elliptical, compressed, its lateral muscles rather thick, the epithelium dense and longitudinally rugous; intestine of moderate length and width; cœca very small, oblong. Eyes of moderate size. Nostrils small, elliptical, direct, pervious, in the fore part of the large nasal membrane, which is anteriorly bare. External aperture of ear large and roundish. Head rather large, ovate, and convex above; neck short; body compact. Legs of moderate length, slender; tarsus much compressed, covered anteriorly with a long plate and four anterior scutella; toes rather short, slender, the second and fourth about equal; the first longer, and stoutest, the third and fourth united as far as the second joint of the latter; claws long, moderately arched, extremely compressed, laterally grooved, extremely acute. Plumage soft and blended; bristles rather large, wings short, broad, convex, with eighteen quills; the first extremely small, the fourth longest, but the third and fifth scarcely less; tail short, nearly even.

The species of this genus frequent bushy places, perching on the twigs or on stones, whence they sally forth in pursuit of insects, and often hover in search of them. They nestle on the ground among shrubs. The two which occur in Britain are found chiefly on heaths, commons, and wastes overgrown with juniper, furze, brambles, sloes, and other shrubs.

71. Fruticicola Rubetra. Whin Bushchat.

Male with the upper parts light yellowish-red, streaked

with distinct oblong blackish-brown spots; a yellowish-white band over the eye; a patch on the wing, a longitudinal band on each side of the neck, and the basal part of the tail, white; the lower parts light red anteriorly, paler behind. Female with the dark spots larger, the white markings less conspicuous, that on the wing occupying only the tips of some of the coverts, the lower parts of a duller and paler tint. Young with the upper parts dusky, each feather marked with a central, oblong, yellowish-grey spot; the lower parts light greyish-brown, the feathers on the fore neck margined with dusky. By the abrasion of the feathers, as the summer advances, the upper parts in the adults become darker, the wings of a more uniform but lighter brown, the fore neck and breast of a pale red, and the white markings of a purer tint.

Male, $5\frac{1}{4}$, $9\frac{1}{4}$, $2\frac{1}{12}$, $\frac{5}{12}$, $\frac{1}{12}$, $\frac{7}{12}$, $\frac{3}{12}$. Female, $5\frac{1}{4}$, $9\frac{2}{12}$.

The Whinchat leaves us in September and returns in April. It is generally dispersed over the country, occurring here and there in pastures, chiefly in hilly and upland parts, but also in low tracts overgrown with small shrubs. It flits on wing by short starts from place to place, is most frequently seen on the top twig of a bush, whence it issues in pursuit of insects, when stationed is continually jerking its body and tail, at every movement uttering a short sharp note resembling the syllable chat, or tick, whence its common name of Whinchat. It has a short, modulated, cheerful song, which it performs either when perched or when fluttering in the air over a bush. The nest is concealed among shrubs and herbage, and is composed of grasses, fibrous roots, and moss, with a lining of finer fibres and hair. The eggs, four or five, are of a uniform light greyish-blue, sometimes marked with brownish-red dots, but generally unspotted, eight and a half twelfths long, six and a half twelfths in breadth. It breeds twice in the season.

Whinchat. Furzechat.

Motacilla Rubetra, Linn. Syst. Nat. i. 332.—Saxicola Rubetra, Temm. Man. d'Ornith. i. 244.—Fruticicola Rubetra, Whin Bushchat, MacGillivray, Brit. Birds, ii. 273.

72. Fruticicola Rubicola. Black-headed Bushchat.

Male with the head and throat black, the breast brownish-red, the sides of the neck, a spot on the wings, and the basal part of the upper tail-coverts, white, the upper parts brownish-black, the feathers edged with brownish-red. Female with the head and upper parts streaked with brownish-black and

brownish-red, the throat yellowish-grey, the breast dull brownish-red, a white spot on the wings, and the upper tail-coverts yellowish-red. Young with the upper parts dusky, streaked with pale yellowish-red, the lower dull yellowish-brown, the fore neck mottled with dusky, and some of the inner secondary coverts white. Considerable diversity is produced by the abrasion of the margins of the feathers, in summer.

Male, $5\frac{1}{2}$, 9, $2\frac{10}{12}$, $\frac{5}{12}$, $\frac{10}{12}$, $\frac{7}{12}$, $\frac{3}{12}$. Female, $5\frac{1}{4}$, 9.

Although it appears that many individuals of the species leave us in autumn, it is to be found both in England and Scotland in winter. It is generally dispersed in summer, although nowhere abundant, resorting to heaths and hill pastures overgrown with furze, juniper, and other low shrubs. Its favourite station is the top twig of a bush, whence it sallies forth in pursuit of insects. It flits about by short starts, with a direct flight, or alighting jerks its body and tail, and utters at intervals a note resembling the syllables snack, chack, or chit. The nest, which is placed on the ground among shrubs, is bulky, composed of grass and moss, and lined with finer straws, fibrous roots, hair and wool. The eggs, five or six, are light greenish-blue, marked towards the larger end with pale brown dots, their length eight-twelfths and a half, their breadth nearly seven-twelfths. Although commonly named Stonechat, this bird is not especially addicted to frequenting stony places; but it may sometimes be found in such as are interspersed with shrubs and briars.

Stonechat. Stonesmich. Stonechatter. Blacky-top.

Motacilla Rubicola, Linn. Syst. Nat. i. 332.—Saxicola Rubicola, Temm. Man. d'Ornith. i. 246.—Fruticicola, Black-headed Bushchat, MacGillivray, Brit. Birds, ii. 279.

GENUS XLI. SAXICOLA. STONECHAT.

Bill of moderate length, straight, slender, depressed at the base, compressed toward the end; upper mandible with its dorsal line slightly declinate and nearly straight, the ridge narrow at the base, and continuing rather sharp to the end, the notches obsolete, the tip declinate, narrow, and rather blunt; lower mandible with the angle moderate, the dorsal line nearly straight, the edges inflected, the tip narrowed to a blunt point; the gape-line straight. Mouth rather wide; tongue of moderate length, sagittate, emarginate, and papillate at the base, narrow, concave above, bristly on the edges,

with the tip slit; œsophagus of moderate width, nearly uniform; proventriculus oblong; stomach of moderate size, roundish-elliptical, compressed, its lateral muscles rather thick, the epithelium dense and longitudinally rugous; intestine of moderate length and width; cœca very small, oblong. Eyes of moderate size. Nostrils small, oblong, pervious, in the fore part of the large nasal membrane, which is anteriorly bare. External aperture of ear large and roundish. Head rather large, ovate, and somewhat depressed; neck short; body rather compact. Legs rather long and slender; tarsus much compressed; covered anteriorly with a long plate and four inferior scutella: toes rather short, slender, the second and fourth about equal, the first longer and stoutest, the third and fourth united as far as the second joint of the latter; claws long, moderately arched, extremely compressed, laterally grooved, acute. Plumage soft and blended; bristles short; wings long, broad, straight, with eighteen quills, the first extremely small, the third longest, but little exceeding the second and fourth; tail of moderate length, nearly even.

This genus differs from Fruticicola in having the bill larger, with the notch obsolete, the wings, tail, and tarsi longer. The Saxicolæ frequent rocky or stony places, as well as open pastures, and either sally forth in pursuit of insects, or seek their food on the ground. They nestle among stones, in crevices of rocks, or in holes in the ground.

73. Saxicola Œnanthe. White-rumped Stonechat.

Male with the feet and claws black; the upper parts light ash-grey; a black band from the bill over the cheek and ear-coverts; forehead and a band over the eyes, white, as are the rump and upper tail-coverts; fore neck and part of the breast pale yellowish-brown, throat and other lower parts white; quills brownish-black; tail-feathers white at the base, brownish-black toward the end. Female with the upper parts brownish-grey or light reddish-brown tinged with grey, the forehead brown, a brown band under the eye; the fore neck and part of the breast light reddish-brown. Young with the upper parts greyish-brown, the central part of each feather paler, the lower parts light greyish-yellow, the feathers of the neck and breast tipped with brown, the dark band on the side of the head wanting.

Male, $6\frac{3}{4}$, $12\frac{1}{2}$, $3\frac{11}{12}$, $\frac{7}{12}$, $1\frac{1}{24}$, $\frac{15}{24}$, $\frac{3}{12}$. Female, $6\frac{1}{2}$, $11\frac{1}{4}$.

The Stonechat is the earliest of our summer visitants, arriving about the middle of March. It is generally dispersed, betaking itself to sandy downs, pastures, and stony slopes, both on the coast and in the interior. Rude stone or turf walls are favourite places of resort; and it reposes at night in holes among stones, or in rabbit burrows. It is a very lively and active bird, hopping along with great celerity, flying low by short starts, frequently emitting its cry of chack, chack, and when standing, jerking its body like the bushchats. Its food consists of insects, worms, and small testaceous mollusca. It has a short, lively and pleasantly modulated song, which it performs sometimes when perched on a rock, wall, or turf, more frequently while hovering in the air, or during its short flights. The nest, which is composed of grass, roots, and moss, with a lining of hair, wool, and feathers, is placed in a hole under a stone, or in a wall, or in the ground. The eggs, five or six, or from four to seven, are elongated, oval, ten-twelfths in length, seven-twelfths in breadth, pale greenish-blue. Two broods are reared. On the southern downs, where they collect in great numbers in autumn, these birds are caught with nooses placed between two turfs, they being esteemed delicious food.

White-rump. Fallow-smich. Wheatear. White-tail. Stone-chat. Stane-chack.

Motacilla Œnanthe, Linn. Syst. Nat. i. 332.—Saxicola Œnanthe, Temm. Man. d'Ornith, i. 237.—Saxicola Œnanthe, White-rumped Stonechat, MacGillivray, Brit. Birds, ii. 289.

GENUS XLII. RUTICILLA. REDSTART.

Bill rather short, slender, a little depressed at the base, compressed toward the end; upper mandible with its dorsal line slightly declinate and nearly straight, the ridge very narrow at the base, a slight sinus on the edges, close to the tip, which is slightly declinate, very narrow, and rather acute; lower mandible with the angle of moderate length, the edges inflected, the tip narrowed to a bluntish point; the gape-line straight. Mouth of moderate width; tongue of ordinary length, sagittate, papillate at the base, narrow, bristly on the edges, with the tip slit; œsophagus of moderate width and nearly uniform; proventriculus oblong; stomach roundish, elliptical, compressed, its lateral muscles rather thick, the epithelium dense and longitudinally rugous; intestine of mo-

derate length and width ; cœca very small, oblong. Eyes of moderate size. Nostrils very small, elliptical, pervious, in the fore part of the large nasal membrane, which is anteriorly bare. Head ovate, rather flattened anteriorly ; neck short ; body compact, rather slender. Legs of moderate length, slender ; tarsus very much compressed, anteriorly with a long plate and three inferior scutella ; toes rather long, very slender, much compressed, the two lateral nearly equal, the first stouter ; claws rather long, moderately arched, very slender, extremely compressed, laterally grooved, acute. Plumage very soft and blended ; wings rather long, broad, almost straight, with eighteen quills, the first very small, the second considerably shorter than the third, which is longest. but scarcely exceeds the fourth ; tail rather long, straight, nearly even.

The Redstarts, which have the bill shorter than that of the Stonechats, and more slender than that of the Bushchats, are intermediate in form between the Motacillæ, Saxicolæ, and Sylviæ. Their food is composed of insects, which they generally catch on wing, of larvæ, pupæ, and berries. Only one species is of common occurrence in Britain, but two others have been met with there.

74. Ruticilla Cyanecula. Blue-throated Redstart.

Male with the upper parts wood-brown, the fore neck and breast with patches of ultramarine blue and light red ; tail light red, toward the end brownish-black ; breast and abdomen whitish, sides and lower wing and tail coverts pale reddish-yellow. Female with the upper parts as in the male, the throat white, with a curved band of blue, having black spots intermixed. Young brown, spotted with whitish, and having a large white space on the throat. In place of the light red on the throat, the adults sometimes have white.

Male, $5\frac{12}{12}$, . ., $3\frac{1}{4}$, $5\frac{1}{4}$, $1\frac{1}{12}$, $\frac{8}{12}$, $\frac{3}{12}$.

An individual was shot near Newcastle, in May 1826, and another in Dorsetshire. The species is said to be not uncommon in various parts of the Continent, extending from Spain and Italy to Siberia, Russia, Finland, and the north of Sweden.

Blue-throated Warbler.

Motacilla suecica, Linn. Syst. Nat. i. 336.—Sylvia suecica, Temm. Man. d'Ornith. i. 216.—Ruticilla Cyanecula, Blue-throated Redstart, MacGillivray, Brit. Birds, ii. 300.

75. Ruticilla Phœnicurus. White-fronted Redstart.

Male with the middle of the forehead white, its anterior part, the cheeks, and throat, black; the hind-head, neck, and back deep ash-grey; the breast, rump, and tail reddish-orange. Female with the upper parts reddish-grey, the throat reddish-white, the breast, rump, and tail reddish-orange. Young with the upper parts brownish-grey, the forehead without white, the throat lunulated with white, the red of the fore neck and breast similarly variegated.

Male, $5\frac{3}{4}$, $9\frac{1}{4}$, $3\frac{2}{12}$, $\frac{5}{12}$, $\frac{11}{12}$, $\frac{6}{12}$, $\frac{3}{12}$. Female, $5\frac{7}{12}$, $9\frac{1}{12}$.

This species bears a considerable resemblance to the White-rumped Stonechat, in form, colour, and habits. It arrives from the middle to the end of April, and departs in October. Generally assuming a station on a stone or twig, and jerking out its tail at intervals, it sallies forth in pursuit of insects, in the manner of several other Saxicolinæ and of the Flycatchers. It is very partial to walls, and frequently places its nest in a hole, or chink of one, but sometimes in the hole of a tree. It is composed of fibrous roots and moss, and is plentifully lined with hair. The eggs, six or seven, are of a light greenish-blue colour, scarcely distinguishable from those of the Hedge Chanter, although somewhat smaller, their length being nine-twelfths, their breadth six-twelfths. The Redstart is extensively distributed in Britain and Ireland.

Redstart. Redtail. Firetail.

Motacilla Phœnicurus, Linn. Syst. Nat. i. 335.—Sylvia Phœnicurus, Temm. Man. d'Ornith. i. 220.—Ruticilla Phœnicurus, White-fronted Redstart, MacGillivray, Brit. Birds, ii. 305.

76. Ruticilla Tithys. Black-breasted Redstart.

Male with the upper parts greyish-blue; the throat and breast black, the rump and tail coverts brownish-red; the tail light red. Female greyish-brown above, light grey beneath, the rump reddish-brown, the tail brownish-red.

Male, 6, .., $3\frac{4}{12}$, $\frac{5}{12}$, 1, $\frac{6}{12}$, $\frac{3}{12}$. Female, $5\frac{3}{4}$.

Individuals have been killed in various parts of England: one at Kilburn, in October 1829; one near Bristol, in the summer of 1830; another in the same vicinity, in December 1835; one at Brighton; and one at Teignmouth in Devonshire.

Black Redstart. Black Redtail.

Sylvia Tithys, Lath. Ind. Ornith. ii. 512.—Sylvia Tithys, Temm. Man. d'Ornith. i. 218.—Ruticilla Tithys, Black-breasted Redstart, MacGillivray, Brit. Birds, ii. 311.

FAMILY XVIII. SYLVIINÆ. SYLVIINE BIRDS OR WARBLERS.

Body slender; neck short; head rather large, ovate. Bill short, straight, slender, tapering, rather broader than high at the base, compressed toward the end, its outlines very slightly convex, the notch of the upper mandible obsolete or faint. Mouth of moderate width; both mandibles moderately concave; tongue of moderate length, emarginate and papillate at the base, narrow, grooved above, horny, thin-edged, its point slit and lacerated; œsophagus of moderate width, and without dilatation; stomach elliptical, with the lateral muscles strong, the epithelium thin, tough, and longitudinally rugous; intestine short, and rather wide; cœca very small. Trachea with four pairs of inferior laryngeal muscles. Eyes of moderate size. Nostrils small, oblong, operculate. Aperture of ear large, elliptical, or roundish. Feet of moderate length; tarsus slender, much compressed, distinctly scutellate before, thin-edged behind, with two longitudinal plates; toes four, moderate, slender, the first comparatively stout, the lateral about equal; claws arched, extremely compressed, acute. Plumage soft and blended; wings of moderate length, more or less rounded, of eighteen quills; tail moderate, of twelve feathers, even, rounded, or emarginate.

The Sylviinæ are birds of small size, none of them much exceeding the Nightingale. They are distinguished from the Saxicolinæ by being less robust, by having the bill narrower at the base, and the tarsi more slender. They are active, lively, and, in general, remarkable for the variety, softness, and modulation of their notes, several of them being among the most celebrated songsters. They feed on insects, larvæ, soft fruits, and sometimes seeds. Most of them, owing to their being essentially in-

sectivorous, are migratory. Species are found in all parts of the globe. In Britain sixteen have been met with.

GENUS XLIII. PHILOMELA. NIGHTINGALE.

Bill of moderate length, straight, rather broader than high at the base, compressed toward the end; upper mandible with the dorsal line slightly declinate, the ridge narrow, the notches faint, the tip acute; lower mandible with the dorsal line slightly convex, the tip rather acute. Mouth of moderate width; tongue slender, sagittate and papillate at the base, tapering to a slit and lacerated point; œsophagus of moderate width, without dilatation; proventriculus oblong; stomach a gizzard of moderate power, roundish, compressed, with rather thin muscles, large tendons, thin, dense, longitudinally rugous epithelium; intestine short, of moderate width; cœca very small, cylindrical. Eyes rather small. Nostrils rather large, oblong, operculate. External aperture of ear large, roundish. Head ovate-oblong; neck short; body rather slender. Tarsi rather long, slender, compressed, with eight anterior scutella, of which the upper are indistinct; toes slender, compressed, the first stout, the lateral equal; claws of moderate length, arched, extremely compressed, laterally grooved, acute. Plumage soft and blended; bristles very small; wings of moderate length, broad, rounded; the first quill very short, third longest, second and fifth equal; tail rather long, straight, even, or slightly rounded.

The Nightingales form a genus differing from the Sylviæ chiefly in being of a more slender form, and in having the bill, tarsi, and tail, more elongated. They are very intimately allied to the Turdinæ. One species occurs in England.

77. Philomela Luscinia. Brake Nightingale.

Upper mandible reddish-brown, lower pale yellowish-brown at the tip; feet and claws pale greyish-brown; plumage above reddish-brown, redder on the head and rump, the tail of a brighter tint; throat, lower part of breast, and abdomen, greyish-white; lower part of neck and sides pale greyish-brown; lower tail-coverts dull yellowish-white. Young similar, but

with the feathers of the upper parts tipped with reddish-yellow, those of the lower margined with dusky.

Male, $6\frac{9}{12}$, $10\frac{1}{2}$, $3\frac{4}{12}$, $\frac{5}{12}$, 1, $\frac{7}{12}$, $\frac{3}{12}$. Female, $6\frac{1}{2}$, 10.

The Nightingale arrives in the south of England about the middle of April, dispersing over the southern and eastern counties, and proceeding as far north as the vicinity of York and Carlisle. Although supposed to have been heard in Scotland, it has never been obtained there. Its favourite haunts are copses and hedge-rows, and its food insects of various sorts. Being so highly esteemed on account of the pre-eminence of its song, it is caught in considerable numbers. The nest is bulky, formed of dry leaves, and lined with grass, fibrous roots, and hair. The eggs, four or five, are of a uniform pale olive-brown, often tinged with greyish-blue, nine and a half twelfths of an inch in length, seven-twelfths in breadth.

Motacilla Luscinia, Linn. Syst. Nat. i. 328.—Sylvia Luscinia, Temm. Mann. d'Ornith. i. 195.—Philomela Luscinia, Brake Nightingale, MacGillivray, Brit. Birds, ii. 321.

GENUS XLIV. SYLVIA. WARBLER.

Bill rather short, slender, a little broader than high at the base, slightly compressed toward the end; upper mandible with the dorsal line straight and declinate, the ridge narrow, the notches rather distinct, the tip declinate, very narrow, and blunt; lower mandible with the dorsal line very slightly convex, the tip broader than that of the upper; gape-line straight. Mouth of moderate width; tongue slender, sagittate, finely papillate at the base, tapering to a slit and lacerate point; œsophagus of moderate width, without dilatation; proventriculus oblong; stomach a gizzard of moderate power, roundish, compressed, its muscles rather thin, the tendons large, the epithelium thin, dense, longitudinally rugous; intestine short, of moderate width; cœca very small, cylindrical. Nostrils oblong, narrow, operculate. Eyes rather small. Aperture of ear large, roundish. Head ovate; neck short; body ovate, rather slender. Feet slender; tarsus rather short, much compressed, with eight distinct anterior scutella; toes of moderate length, much compressed, the first rather large, the lateral equal, the third and fourth united at the base; claws rather stout, well arched, much compressed, laterally grooved, acute. Plumage soft and blended; wings of mo-

derate length, with eighteen quills; the first minute and pointed, the third longest, the second and fourth very little shorter; tail of moderate length, straight, slightly emarginate.

The Warblers are small, delicate, active, and lively birds, which frequent woods, thickets, hedges, and gardens, feed on insects and small fruits, and have a pleasantly modulated song. Four species, all migratory, occur in Britain.

78. Sylvia hortensis. Garden Warbler.

Upper parts light greyish-brown, tinged with olive; wings and tail dusky, margins of the quills and coverts of the same colour as the back, the lateral tail-feathers like the rest; lower parts greyish-white, the breast and sides tinged with brown. Young similar, but with the upper parts of a richer yellowish-brown tint, the lower more tinged with yellow, the axillars and lower wing-coverts pure yellow.

Male, 6, $9\frac{1}{12}$, $3\frac{1}{4}$, $\frac{5}{12}$, $\frac{9}{12}$, $\frac{12}{24}$, $\frac{7}{24}$. Female, $5\frac{10}{12}$, 9.

Arrives in the end of April and beginning of May, and is generally dispersed in England, as well as the south of Scotland. It occurs chiefly in thickets, plantations, woods, and gardens, and from its plain colours and unobtrusive habits, attracts little attention. Its song is similar to that of the Blackcap. It feeds on insects and worms, as well as pulpy fruits, is extremely active and restless, rears two broods, and departs by the middle of September. The nest is frequently placed on the ground, and is loosely constructed. The eggs, from four to six, are nine-twelfths long, six and a half twelfths in breadth, dull white, dotted with light brown and grey.

Fauvette. Garden Fauvet. Greater Pettychaps. Nettle-creeper.

Sylvia hortensis, Lath. Ind. Ornith. ii. 507.—Sylvia hortensis, Temm. Man. d'Ornith. i. 206.—Sylvia hortensis, Garden Warbler or Pettychaps, MacGillivray, Brit. Birds, ii. 345.

79. Sylvia Atricapilla. Blackcap Warbler.

Male with the upper parts light yellowish-grey, the head black; the lower parts ash-grey, paler behind, and tinged with yellow; wings and tail greyish-brown. Female similar, but with the head reddish-brown. Young similar to the adult, but with the head greyish-brown.

Male, $6\frac{1}{2}$, $9\frac{1}{4}$, $3\frac{1}{12}$, $\frac{5}{12}$, $\frac{10}{12}$, $\frac{6}{12}$, $\frac{8}{12}$. Female, $6\frac{1}{12}$, $9\frac{1}{4}$.

Arrives in April and departs in September, is generally distributed in England, and occurs here and there in the south

of Scotland; but being shy and of hideling habits, is not easily discovered. Its song is delightful, in the opinion of some little inferior to that of the nightingale. The nest, loosely constructed, and lined with fibrous roots and hair, is placed in the fork of a shrub, or on the ground. The eggs, four or five, are eight and a half twelfths long, seven-twelfths in breadth, greyish-white, faintly mottled and freckled with purplish-grey, with some streaks of blackish-brown.

Mock Nightingale.

Motacilla Atricapilla, Linn. Syst. Nat. i. 332.—Sylvia Atricapilla, Temm. Man. d'Ornith. i. 201.—Sylvia Atricapilla, Black-capped Warbler, or Black-cap, MacGillivray, Brit. Birds, ii. 339.

80. Sylvia cinerea. White-throated Warbler.

Male with the tarsi brownish-red; the upper parts light greyish-brown, the head brownish-grey, the wings and tail dusky, the secondaries and their coverts broadly edged with light brownish-red, the lateral tail-feathers with the outer web and a portion of the inner greyish-white; lower parts greyish-white, the lower part of the fore neck tinged with red, the sides and tibial feathers with brown. Female similar; the upper parts yellowish-brown, the head less tinged with grey, the lateral tail-feathers with brownish-white. Young with the upper parts uniform reddish-brown, the quills more broadly margined with light red, the lateral tail-feathers reddish-white in their whole extent, the lower parts greyish-white tinged with brown.

Male, $5\frac{1}{12}$, $8\frac{3}{4}$, $2\frac{1}{12}$, $\frac{9}{24}$, $\frac{13}{24}$, $\frac{5}{12}$. Female, $5\frac{1}{12}$, $8\frac{1}{2}$.

Arrives in the end of April and beginning of May, and departs in September. It frequents hedges, thickets, and gardens, is extremely restless and petulant, flits about with a rapid flight, often hovers on wing, emitting its song, which is short, lively, but not remarkably pleasant. It feeds on insects, larvæ, and soft fruits. The nest, usually placed among brambles, briars, or rank herbaceous plants, is elegantly, but loosely, constructed of withered stems of Galium Aparine or Goose-grass, lined with finer filaments and hair. The eggs, generally five, are greenish-white, spotted and freckled with greyish-green and purplish-grey, their length nine-twelfths, their breadth six-twelfths and three-fourths.

White-throat. Greater White-throat. Whey-beard. Wheetie-why. Peggy White-throat. Nettle-creeper. Churr. Muff.

Muffet. Muftie. Charlie-muftis. Beardie. Whattie. Whishey. Blethering Tam.

Sylvia cinerea, Lath. Ind. Orn. i. 514.—Sylvia cinerea, Temm. Man. d'Ornith. i. 207.—Sylvia cinerea, White-throated Warbler, or White-throat, MacGillivray, Brit. Birds, ii. 350.

31. Sylvia garrula. White-breasted Warbler.

Male with the feet bluish-grey; the upper parts brownish-grey, the head dark ash-grey, the wings and tail dusky, the secondaries edged with light grey, the lateral tail-feathers nearly white; lower parts white, the breast tinged with red, the sides with grey. Young like the female.

Male, $5\frac{1}{4}$, 8, $2\frac{8}{12}$, $\frac{9}{24}$, $\frac{10}{12}$, $\frac{6}{12}$, $\frac{2}{12}$.

Although *Sylvia hortensis, cinerea,* and *garrula,* are often confounded by students, they may very readily be distinguished by attending to the specific characters given above. The present species, which arrives and departs about the same periods as the rest, is very uncommon in the south of Scotland, and less common than *S. cinerea* in any part of England. It feeds on insects, larvæ, and small fruits; frequents gardens, hedges, and thickets; is extremely active and shy; and has a short, not unpleasant warble. The nest, which is placed among briars, or among the herbage, is composed of stems and leaves of slender grasses, rather loosely interwoven, with a lining of fine straws, fibrous roots, and hair. The eggs, usually five, are white or greyish-white, spotted and patched with light grey and brown; their length eight-twelfths, their breadth six-twelfths.

Lesser White-throat. Babillard. Babbling Warbler.

Motacilla garrula, Linn. Fauna Suec. 254.—Sylvia Curruca, Temm. Man. d'Ornith. i. 209.—Sylvia garrula, White-breasted Warbler, MacGillivray, Brit. Birds, ii. 367.

GENUS XLV. MELIZOPHILUS. FURZELING.

The only species of which this genus is composed differs little from the Sylviæ in form and habits, but has the tail remarkably elongated.

Bill short, slender, broader than high at the base, compressed toward the end; upper mandible with its dorsal line convex toward the tip, which is acute, the notches very small; lower mandible with the edges a little inflected, the tip acute.

Nostrils elliptical, pervious, in the fore part of the nasal membrane, which is feathered behind. Eyes of moderate size. External aperture of ear large and roundish. Tarsi slender, rather long, with the scutella distinct; toes of moderate length, slender; claws moderate, arched, much compressed, very acute. Plumage blended; wings rather short, rounded; the first quill very small, the fourth and fifth longest; tail long, straight, graduated.

82. MELIZOPHILUS PROVINCIALIS. PROVENCE FURZELING.

Upper parts blackish-grey; fore part of neck and sides of the body reddish-brown, abdomen white; tail long, graduated; bill brownish-black, with the base of the lower mandible orange; tarsi and toes light reddish-brown, claws dusky. Female similar, but with the tints lighter, and the throat streaked with white.

Male, 5, . ., $2\frac{4}{12}$, $2\frac{9}{14}$, $1\frac{9}{12}$, $1\frac{5}{12}$, $1\frac{3}{12}$.

This bird, first discovered as British by Latham, occurs on commons in several of the southern counties of England. It is a permanent resident, inhabiting furze thickets, among which it glides with the greatest activity, flying with short jerks in the manner of the Bush-chats and White-throat, and feeding on small insects, which it frequently seizes on wing, returning to its perch. Its nest is loosely constructed, like that of the White-throat. The eggs also resemble those of that bird, being greenish-white, freckled all over with olivaceous brown and cinereous.

Dartford Warbler. Furze Wren.

Motacilla provincialis, Gmel. Syst. Nat. i. 958.—Sylvia provincialis, Temm. Man. d'Ornith. i. 211.—Melizophilus provincialis, Selby, Illust. i. 219.—Melizophilus provincialis, Provence Furzeling, MacGillivray, Brit. Birds, ii. 383.

GENUS XLVI. PHYLLOPNEUSTE. WOOD-WREN.

Bill rather short, very slender, straight, rather depressed at the base, compressed toward the end; upper mandible with the dorsal line straight, slightly declinate toward the end, the ridge very narrow at the base, the notches distinct, the tip declinate, very narrow, but truncate; lower mandible with the dorsal line very slightly convex, the edges erect, the tip acute. Mouth of moderate width; tongue slender, sagit-

tate, finely papillate at the base, flat above, tapering to a slit point; œsophagus of moderate width; proventriculus small; stomach roundish, compressed, its muscular coat rather thin, the tendons large, the epithelium dense, thin, with broad rugæ; intestine short; cœca very small, cylindrical. Nostrils oblong, narrow, operculate. Eyes rather small. Aperture of ear large, roundish. Head oblong; neck short; body slender. Tarsus rather long, much compressed, with seven anterior scutella, of which only the lower three are distinct; toes moderate, very slender, much compressed, the first rather large, the second and fourth about equal, the third and fourth united at the base; claws rather long, arched, extremely compressed, laterally grooved, acute. Plumage soft and blended; bristles small; wings of moderate length, with nineteen quills; the first very small, the next four longest; tail rather long, straight, slightly emarginate, the feathers weak, and rather slender.

The Wood-wrens are very small and delicate birds, of extremely active habits, migratory, frequenting woods and bushy places, especially in the lower grounds, and feeding on insects, larvæ, pupæ, and worms. They have a short, lively, and melodious song; a rapid, gliding, and undulated flight. Three species occur in Britain, very similar to each other, and best distinguished by the form of the wing.

83. Phyllopneuste sylvicola. Yellow Wood-wren.

Length about five inches; wings long, the second quill intermediate between the third and fourth, which, with the fifth, have their outer webs cut out toward the end; upper parts light yellowish-green; throat and sides of the breast yellow; breast, abdomen, and lower tail-coverts white. Young similar, being merely of a lighter tint.

Male, $5\frac{2}{12}$, $3\frac{3}{4}$, $3\frac{2}{12}$, $\frac{2}{24}$, $\frac{1}{24}$, $\frac{5}{12}$, $\frac{5}{24}$. Female, $5\frac{2}{12}$, $3\frac{2}{12}$.

Arrives from the middle of April to that of May, and departs about the end of September. It inhabits woods, thickets, and gardens, in most parts of England, and the southern and middle divisions of Scotland. Its song, which it performs while perched on a twig, is soft, modulated, and short, the first notes prolonged, the last rapid, and forming a kind of shrill shaking sound. The nest is well constructed, and lined with fine grasses and hair. The eggs, five or six, white, with red-

dish-purple spots. It is not nearly so common as the next species.

Wood Wren. Yellow Wren. Willie Muftis.

Sylvia sylvicola, Lath. Ind. Ornith. Suppl. ii. 53.—Sylvia sibillatrix, Temm. Man. d'Ornith. i. 223.—Phyllopneuste sylvicola, Yellow Wood-wren, MacGillivray, Brit. Birds, ii. 364.

84. Phyllopneuste Trochilus. Willow Wood-wren.

Length about five inches; wings of moderate length, the second quill shorter than the fifth, which, with the third and fourth, has its outer web cut out towards the end; upper parts light greenish-brown, the feathers edged with yellowish-green; the cheeks and sides of the neck pale greyish-brown tinged with yellow; the fore neck and sides greyish-white, streaked with yellow; breast and abdomen white; lower tail-coverts yellowish-white. Young similar, with the upper parts lighter, the yellow beneath brighter.

Male, 5, $7\frac{3}{4}$, $2\frac{8}{12}$, $\frac{9}{24}$, $9\frac{1}{4}$, $\frac{5}{12}$, $\frac{2}{12}$. Female, $5\frac{2}{12}$, 8.

Arrives from the beginning to near the end of April, and departs about the end of September. It inhabits woods, thickets, and gardens, and is generally dispersed. Its song is soft, mellow, and extremely pleasing, the first notes prolonged, the rest gradually falling and becoming shorter. The nest is lined with feathers, and arched over. The eggs, from four to seven, seven and a half twelfths long, white, with light red or purplish-red spots.

Willow Warbler. Willow Wren. Ground Wren. Hay Bird. Huckmuck. Willie Muftie.

Motacilla Trochilus, Linn. Syst. Nat. i. 338.—Sylvia Trochilus, Temm. Man. d'Ornith. i. 224.—Phyllopneuste Trochilus, Willow Wood-wren, MacGillivray, Brit. Birds, ii. 371.

85. Phyllopneuste Hippolais. Short-winged Wood-wren, or Chiff-chaff.

Length about four inches and a half; wings rather short, the second quill about the same length as the seventh; upper parts light greenish-brown tinged with grey, the feathers slightly edged with yellowish-green; lower parts brownish-white, tinged with yellow; bill and feet dark brown.

Male, $4\frac{1}{2}$, 6, $2\frac{2}{12}$, $\frac{9}{24}$, $\frac{8}{12}$, $\frac{9}{24}$, $\frac{2}{12}$.

Although very similar to the Willow Wood-wren, this species is easily distinguished by its shorter and more rounded wings. In form it approaches to the Reguli. It arrives about the beginning of April, departs in October, is generally distri-

buted, but nowhere very common, and much less numerous than the last species. It frequents thickets, hedges, and gardens, is extremely active, often pursues insects on wing, has a rapid flight, and a shrill, rather weak song, short, but pleasantly modulated. The nest is of an elliptical form, with the aperture near the top, and lined with feathers. The eggs, five or six, are seven-twelfths long, five and a half twelfths in breadth, white, with purplish-red spots.

Chip-chop. Hay Bird. Least Willow-wren.

Sylvia Hippolais, Lath. Ind. Ornith. ii. 507.—Sylvia rufa, Temm. Man. d'Ornith. i. 225.—Phyllopneuste Hippolais, Short-winged Wood-wren, or Chiff-chaff, MacGillivray, Brit. Birds, ii. 379.

GENUS XLVII. REGULUS. KINGLET.

Bill rather short, straight, very slender, rather broader than high at the base, compressed toward the end, acute; upper mandible with the ridge rather sharp, the edges slightly inflected toward the end, the notches wanting, the tip acute. Mouth narrow; tongue sagittate, slender, thin, concave above, slightly bristled at the tip; œsophagus narrow; stomach elliptical, compressed, its muscular coat thick, the epithelium dense and rugous; intestine short and of moderate width. Nostrils linear-oblong, covered by a single, delicate, oblong feather. Eyes of moderate size. Aperture of ear large, roundish. Head oblong, large; neck short; body moderate. Legs rather long; tarsus longer than the middle toe, slender, compressed anteriorly with a long slender plate and three scutella; toes rather large, the first stronger and almost equal in length to the third, the second and fourth nearly equal, the third and fourth united at the base; claws long, arched, extremely compressed, laterally grooved, acute. Plumage extremely soft and blended, almost downy; wings of ordinary length, broad, rounded, of eighteen quills, the first not half the length of the second, the fourth longest; tail of moderate length, narrow, arched at the base, slightly emarginate.

The Kinglets, which are the smallest birds of the family, inhabit the woods and thickets of the colder and temperate regions of both continents. They generally move in bands among the branches, searching assiduously for insects and

larvæ. One species is common in Britain, and one or two individuals of two others have been met with there.

86. Regulus auricapillus. Gold-crowned Kinglet.

Plumage of the upper parts light yellowish-brown, of the lower pale brownish-grey; the top of the head silky and reddish-orange, with a longitudinal band on each side of black feathers, of which the inner webs of the inner are lemon-yellow; the cheeks yellowish-grey. Female similar, but with the crown lemon-yellow. Young without yellow on the head, its upper part being light greyish-brown, with two lateral bands of greyish-black.

Male, $3\frac{3}{4}$, $6\frac{1}{2}$, $2\frac{1}{8}$, $\frac{9}{24}$, $\frac{8}{12}$, $\frac{8}{24}$, $\frac{2}{12}$. Female, $3\frac{1}{2}$, 6.

Generally abundant in woods, especially those of pine and fir, in all parts of Britain, but especially in Scotland, where it remains all the year. In winter it moves about in troops, often associating with Titmice, the Creeper, and other small birds. It is indigenous even in Orkney and Shetland, where there are no woods. Its song is short and feeble, its flight rapid, all its motions lively, and it clings to the twigs in all postures. Occasionally it betakes itself to low bushes, as broom and furze, or even heath. The nest is large, globular, formed of moss and lichens, interwoven with wool or hairs, and lined with feathers. The eggs, from five to eight, are broadly ovate, nearly six-twelfths in length, and nearly five-twelfths in breadth, brownish or reddish-white, darker at the larger end.

Golden-crested Wren. Marygold Finch. Tidley Goldfinch.

Motacilla Regulus, Linn. Syst. Nat. i. 338.—Sylvia Regulus, Temm. Man. d'Ornith. i. 229.—Regulus cristatus, Id. Ibid. iii. 157.—Regulus auricapillus, Gold-crowned Kinglet, MacGillivray, Brit. Birds, ii. 408.

87. Regulus ignicapillus. Fire-Crowned Kinglet.

Plumage of the upper parts light yellowish-brown, of the lower pale brownish-grey; the top of the head silky and reddish-orange, with a longitudinal band on each side of black feathers, the inner webs of some of which are pale yellow; the cheeks yellowish-grey; a black band in the loral space, and behind the eye, a narrower dusky band from the base of the lower mandible. Female with the crown dull pale orange, and the dusky bands on the cheek obscure.

Male, $3\frac{1}{12}$, . ., $2\frac{3}{12}$, $\frac{3}{8}$, $\frac{8}{12}$, $\frac{9}{24}$, $\frac{5}{24}$.

This species, easily distinguished by the two black bands on each side of the head, but otherwise very similar to the last,

has occurred in a very few instances, in the south-eastern parts of England; the first individual found having been obtained by Mr Jenyns, in his garden, at Swaffham Bulbeck, near Cambridge, in the autumn of 1832. It is said to be dispersed over the continent, and to be migratory.

Sylvia ignicapilla, Temm. Man. d'Ornith. i. 231.—Regulus ignicapillus, Id. Ibid. iii. 158.—Regulus ignicapillus, Fire-crowned Kinglet, MacGillivray, Brit. Birds, ii. 416.

88. Regulus modestus. Plain-crowned Kinglet.

Not having seen this bird, first described by Mr Gould, I transcribe from the Annals of Natural History, the following notice, by Mr Hancock of Newcastle-on-Tyne, respecting an individual shot on the 26th of September 1838:—"The whole of the upper plumage a greenish-yellow; on the centre of the crown of the head is a streak of paler; a light lemon-coloured streak extends over the eye from the base of the bill to the occiput; a short streak of the same colour passes beneath the eye, and a narrow band of dusky passes through the eye, and reaches the termination of the auriculars. The under parts pale yellow; the ridge of the wing bright lemon-colour; wing-feathers dusky, edged with pale yellow, becoming broader on the secondaries; two conspicuous bands of lemon-colour cross the coverts; the wings reach to within three-fourths of an inch of the end of the tail. Bill brown, with the under mandible paler at the base; mouth yellow; legs and toes brown, with the under surface of the toes inclining to yellow; claws brown.

"Its manners, as far as I had an opportunity of observing them, were so like those of the Golden-crested Wren, that at first I mistook it for that species. It was continually in motion, flitting from place to place in search of insects on umbelliferous plants, and such other herbage as the bleak banks of the Northumberland coast affords. Such a situation could not be at all suited to the habits of this species, and there can be little doubt that it had arrived at the coast previous to, or immediately after, its autumnal migrations." This species is said to want the loose oblong feather which covers the nostril in all the rest.

$4\frac{1}{18}$, $6\frac{1}{2}$, $2\frac{1}{18}$, $\frac{7}{18}$.

Regulus modestus, Gould, Temm. Man. d'Ornith. iv. 618.

GENUS XLVIII. SIBILLATRIX. CHIRPER.

Bill of moderate length, straight, very slender, slightly

broader than high at the base, much compressed toward the end; upper mandible with the ridge narrow at the base, the edges a little inflected, the notches slight, the tip very narrow; gape-line nearly straight. Nostrils linear-oblong, pervious, in the fore part of the nasal membrane, which is feathered behind. Eyes of moderate size. Aperture of ear large, roundish. Head ovato-oblong, flattened above, very narrow before; neck rather short; body slender. Feet of moderate length, tarsus rather long, extremely compressed, with eight large distinct anterior scutella; toes extremely compressed, the lateral equal and rather long, the hind toe large, but shorter than the third, which is united with the fourth at the base; claws rather long, moderately arched, extremely compressed, laterally grooved, very acute. Plumage soft and blended; wings of moderate length, a little curved, broad, rounded, of eighteen quills; the first very small, the third longest; tail rather long, broad, graduated, nearly straight.

The extremely compressed bill, and fan-shaped tail, distinguish this genus, of which we have only one species.

89. Sibillatrix Locustella. Grasshopper Chirper.

Tail long, much graduated, and rounded; plumage of the upper parts dull olive-brown, with oblong dusky spots, of the lower parts pale yellowish-brown, the fore part of the neck with a few dusky lines, the tail-coverts with a central brown mark. Female similar, but without the dusky lines on the fore part of the neck. Young yellowish-brown, spotted with dusky above, brownish-yellow beneath.

Male, $5\frac{8}{12}$, $7\frac{1}{2}$, $2\frac{1}{2}$, $\frac{9}{24}$, $\frac{10}{12}$, $\frac{7}{12}$, $\frac{5}{24}$. Female, $5\frac{8}{12}$, $7\frac{1}{2}$.

This slender and elegantly formed, but plainly coloured little bird, is remarkable for its hideling habits, and its peculiar cry, which greatly resembles that of the mole-cricket. It arrives from the middle to the end of April, and is generally dispersed in England. It has also been found in a few instances in the south of Scotland. The nest is composed of dry grass, lined with similar but finer materials. The eggs in one found by Mr Weir in Linlithgowshire, were white, closely freckled with carmine dots.

Grasshopper Warbler. Cricket Bird. Brakehopper.

Sylvia Locustella, Lath. Ind. Orn. ii. 515.—Sylvia Locustella, Temm. Man. d'Ornith. i. 184.—Sibilatrix Locustella, Grasshopper Chirper, MacGillivray, Brit. Birds, ii. 399.

GENUS XLIX. CALAMOHERPE. REEDLING.

Bill of moderate length, straight, slender, broader than high at the base, compressed toward the end; upper mandible with its dorsal line slightly declinate, towards the end a little convex, the ridge narrow at the base, the edges direct, the notches obscure, the tip narrow; lower mandible with the edges inflected, the tip acute; gape-line straight. Mouth of moderate width; tongue of ordinary length, very narrow, sagittate and papillate at the base, concave above, horny toward the end, bristly on the edges at the tip, which is slit; œsophagus of moderate width, nearly uniform; proventriculus oblong; stomach of moderate size, elliptical, compressed, its lateral muscles moderately thick, the tendons rather large, the cuticular lining dense and longitudinally rugous; intestine of moderate length and width; cœca very small. Nostrils elliptical, pervious. Eyes of moderate size. Aperture of ear large, roundish. Head ovate, flattened above, narrow before; neck short; body slender. Feet of moderate length; tarsus much compressed, with eight anterior scutella; toes much compressed, the second and fourth about equal, the first strongest, the third and fourth united at the base; claws long, moderately arched, extremely compressed, laterally grooved, very acute. Plumage generally blended; bristles rather strong; wings of moderate length, a little curved, broad; the first quill extremely small, the second and third longer; tail rather long, straight, rounded.

The species of this genus are remarkable for their habit of frequenting marshy places, and the banks of rivers and lakes, among the willows, reeds, and sedges of which they seek their food, creeping along the stalks and foliage. Unless in having the tarsi more elongated, the claws larger, and the wings shorter and more concave, they differ little from some of the Sylviæ.

90. Calamoherpe phragmitis. Sedge Reedling.

Tail rather long, slightly rounded; upper part of the head brownish-black, the feathers edged with light brown; back and wing-coverts light olive-brown tinged with yellow, the central part of each feather dark brown; rump light reddish-brown; a yellowish-white streak over the eye; lower parts

brownish-white, the lower tail-coverts unspotted. Female similar, but with the upper part of the head more tinged with brown, the back of a lighter tint, the rump less bright. The young resemble the adults, but are more tinged with red.

Male, $5\frac{4}{12}$, $7\frac{8}{12}$, $2\frac{8}{12}$, $\frac{11}{24}$, $\frac{10}{12}$, $\frac{6}{12}$, $\frac{3}{12}$, . Female, $5\frac{5}{12}$, $7\frac{9}{12}$.

The Sedge Reedling, which is rather common in many of the marshy parts of England, but rare in Scotland, arrives in the end of April, and departs in the beginning of October. Its favourite resorts are places overgrown with reeds and other tall aquatic plants, among which it searches for its insect food, and places its nest, which is bulky, loosely constructed of grasses, and lined with finer materials of the same nature, with some hair. The eggs, generally five, are eight-twelfths long, six-twelfths in breadth, of a greenish-white colour, dotted and freckled with light brown and greenish-grey. This bird has a lively, modulated, and mellow song, which is often heard very late at night. It is very active and lively, but from its mode of life is seldom seen.

Sedge Warbler. Sedge-bird. Sedge-wren.

Sylvia Salicaria, Lath. Ind. d'Ornith. ii. 516. — Sylvia phragmitis, Temm. Man. d'Ornith. i. 189. — Calamoherpe phragmitis, Sedge Reedling, MacGillivray, Brit. Birds, ii. 390.

91. Calamoherpe arundinacea. Marsh Reedling.

Tail rather long, considerably rounded; upper parts of a uniform light olive-brown, without spots; lower parts pale greenish-yellow, throat white. Female somewhat smaller, but otherwise similar.

Male, $5\frac{1}{2}$, .., $2\frac{9}{12}$, $\frac{6}{12}$.

This species, which is distinguished by having the upper parts of a uniform tint, they being spotted with dusky in the other, arrives in the end of April, and disperses over the southern and middle parts of England. Its habits are similar to those of the Sedge Reedling; its song, loud, cheerful, much diversified, and sometimes performed at night. The nest, of an obconical form, is fastened to the stalks of several reeds, nettles, or other tall plants, at some distance from the ground. The eggs, four or five, are eight and a half twelfths long, nearly six-twelfths in breadth, greyish-brown, faintly dotted and spotted with greenish-brown.

Reed Warbler. Reed Wren.

Motacilla arundinacea, Gmel. Syst. Nat. i. 992.—Sylvia arundinacea, Temm. Man. d'Ornith. i. 191.—Calamoherpe arundinacea, Marsh Reedling, MacGillivray, Brit. Birds, ii. 395.

GENUS L. ANORTHURA. WREN.

If we shorten the tail of a Calamoherpe and turn it up a little, we shall have something like a Wren. In our species, the bill is also more slender than in Calamoherpe, and somewhat arched, but in several American birds of this group, it is much stouter. Probably the Wrens ought to form a family apart; but I prefer attaching our only species to the Sylviinæ. They might perhaps with equal propriety be referred to the Creepers, Reptatrices.

Bill of moderate length, slender, tapering, acute, slightly arched, subtrigonal at the base, compressed toward the end; upper mandible with its dorsal line slightly arched, the ridge narrow, the notches wanting; lower mandible with the edges inflected, the dorsal line straight; gape-line very slightly arched. Tongue sagittate, very slender, tapering, concave above, slightly jagged toward the tip; œsophagus of moderate width, uniform; stomach roundish, very muscular, with dense, longitudinally rugous epithelium; intestine short and rather wide; cœca very small. Nostrils linear-oblong, operculate. Eyes of moderate size. Aperture of ear large, roundish. Head of moderate size, ovate; neck short; body ovate. Feet of ordinary length; tarsus compressed, with seven anterior scutella, of which the upper are indistinct; toes rather large, compressed; first longer than the two lateral, of which the inner is a little shorter, the third and fourth coherent at the base; claws long, arched, extremely compressed, laterally grooved, acute. Plumage soft and blended; no bristles; wing shortish, broad, concave, much rounded; the first quill short, the third, fourth, fifth, and sixth nearly equal and longest; tail short or moderate, rounded, generally raised.

The Wrens, of which only one species occurs in Britain, are remarkable for their abbreviated form, and the elevated direction of the tail. They construct a very bulky nest, of an oblong or spherical form, and lined with moss and feathers. The eggs are numerous, generally white, more or less dotted or spotted.

92. Anorthura Troglodytes. European Wren.

Upper parts reddish-brown, lower light greyish-brown; a

brownish-white streak over the eye; the hind parts of both surfaces barred with dusky; two transverse bands of white dots on the wings. The female is considerably smaller, and less brightly coloured, with more brown on the lower parts. The young are destitute of the white spots on the wings. Great differences in size and tint are observed.

Male, $4\frac{1}{2}$, $6\frac{1}{2}$, $1\frac{1}{12}$, $\frac{1}{2}\frac{1}{4}$, $\frac{8}{12}$, $\frac{1}{2}\frac{3}{4}$, $\frac{5}{2}\frac{5}{4}$. Female, 4, $6\frac{1}{4}$.

The Wren is generally dispersed, and permanently resident. It frequents stone walls, fragments of rocks, thickets of gorse, hedge-banks, woods, and gardens. Its food consists of insects, small seeds, and soft fruits; its song, full, rich, and mellow, is surprisingly loud; its flight rapid, even, and short. Although not essentially a climber, it clings to perpendicular surfaces sidewise, and is often seen on trees. The nest is enormously large, roundish, or oblong, composed chiefly of moss, and lined with feathers. The eggs are elongated oval, eight-twelfths long, six-twelfths in breadth, pure white, with scattered dots of light red.

Wren. Kitty Wren.

Motacilla Troglodytes, Linn. Syst. Nat. i. 337.—Sylvia Troglodytes, Temm. Man. d'Ornith. i. 233.—Troglodytes vulgaris, Id. Ibid. iii. 160.—Anorthura Troglodytes, European Wren, MacGillivray, Brit. Birds, iii. 15.

FAMILY XIX. MOTACILLINÆ. MOTACILLINE BIRDS, OR WAGTAILS.

The family of Motacillinæ, which is variously allied to the Sylviinæ, Saxicolinæ, and Alaudinæ, is readily distinguished by its very elongated tail, and the peculiar form of the wings, of which the inner secondaries are pointed, and one of them as long as the outer primaries when the wing is closed. They are of slender form, with the neck rather short, and the head oblong.

Bill of moderate length, straight, slender, rather broader than high at the base, compressed beyond the nostrils; upper mandible with its dorsal line straight and a little declinate, the notches slight or obsolete, the tip narrow, slightly deflected; lower mandible with the angle rather long and narrow, the dorsal line ascending and nearly

straight, the edges inflected, the tip acute; gape-line straight. Both mandibles internally concave and narrow, with a median prominent line; tongue very slender, emarginate and finely papillate at the base, flat, tapering to a slit point; œsophagus narrow, uniform; proventriculus oblong; stomach a gizzard of considerable power, roundish or elliptical, with distinct lateral muscles, and dense, thin, longitudinally rugous epithelium; intestine short, of moderate width; cœca very small, cylindrical. Nostrils elliptical, or oblong, in the lower and fore part of the nasal depression, which is feathered at the base. Eyes of moderate size. Aperture of ear large, transversely oval. Feet of ordinary length, slender; tarsus much compressed, the outer slightly united at the base; claws of moderate length, curved, or long and slightly curved, extremely compressed, acute. Plumage soft and blended, the feathers ovate, of loose texture; wings rather long, broad, of eighteen quills, the first obsolete, the next three nearly equal, and longest; one of the inner secondaries very long; tail long, of twelve narrow feathers.

These birds reside in pastures and meadows, frequent the sides of streams and lakes, or the sea-shore, run with great celerity, and almost constantly vibrate their body, like the Totani. Their flight is rapid and undulating; their voice shrill. They feed on insects, larvæ, and small crustacea and mollusca. They are allied to the Saxicolæ and Sylviæ on the one hand, to the Alaudinæ on the other.

GENUS LI. MOTACILLA. WAGTAIL.

Bill of moderate length, slender, straight, a little broader than high at the base, compressed toward the end, its upper outline slightly declinate at the base, then straight, and at the end very slightly decurved, the notches obsolete, the tip acute. Tongue very slender, sagittate and papillate at the base, tapering to a slit point; œsophagus of moderate width; stomach oblong, compressed, with the muscular coat thick,

the tendons large, the epithelium dense, thin, and slightly rugous; intestine short, of moderate width; cœca very small, cylindrical. Nostrils small, elliptical. Eyes moderate. Ear large, elliptical. Head ovato-oblong, small, narrow; neck of moderate length; body ovate. Feet of ordinary length; tarsus much compressed, with seven distinct scutella; toes moderate, much compressed, the first large, the lateral about equal; claws rather long, arched, laterally grooved, extremely compressed, tapering to a fine point. Plumage soft and blended; no bristles; wings long, broad, of eighteen quills, of which nine are primary, the outer three nearly equal, and longest; inner secondaries very long; tail very long, straight, slender, rounded.

The Wagtails are remarkable for their peculiarly slender and elegant form, and the vibratory motion which the body exhibits while they are standing or walking. While searching for food they walk or run, but never hop. They moult in autumn, and again partially in spring.

93. Motacilla Yarrelli. Pied Wagtail.

Male in winter with the forehead, throat, lower parts, and two bands on the wing, white; a black crescent on the fore neck; the head, hind neck, and rump, black, the middle of the back grey; wing-coverts black, the larger margined and tipped with white; quills black, edged with white; tail black, the two lateral feathers white, excepting part of their inner webs. Female with more grey on the back, but otherwise similar. Male in summer with the whole fore neck glossy black, as is the back, except a tinge of grey about the middle. Female similar, but with more grey. Young light grey above, greyish-white beneath, with a dusky crescent on the fore neck.

Male, $7\frac{3}{4}$, $11\frac{1}{2}$, $3\frac{1}{2}$, $\frac{6}{12}$, $\frac{1}{12}$, $\frac{6}{12}$, $\frac{3}{12}$. Female, $7\frac{1}{2}$, $11\frac{1}{4}$.

A very common and elegant bird, generally distributed in Britain and Ireland, but on the Continent hitherto observed only in the north of France, in Sweden, and Norway. It usually frequents the margins of streams, ditches, pools, and lakes, but is often seen in dry pastures, in stony places, and on house-tops. It feeds on insects, larvæ, worms, and small mollusca; has an elegant, undulated flight, and often pursues insects on the wing. The nest, which is placed by the side of a river or stream, on a rocky bank, in a quarry, or among grass, or on a heap of stones, or in a hole in a wall, is composed of dry grass, moss, and leaves, and lined with wool and hair, sometimes

with feathers. The eggs, five or six, are greyish-white, spotted with grey and brown, their length nine-twelfths, their breadth seven-twelfths and a quarter.

It has been proposed, by the Prince of Canino and Mr Gould, to name this, *our* most common Wagtail, *Motacilla Yarrelli*, because it differs in colour from a Wagtail common in the temperate parts of the Continent, and which, it is said, must have been that which Linnæus named *Motacilla alba*. But as our bird occurs in Sweden, where Linnæus lived, as his definition agrees precisely with it, and as he refers to our Willoughby and Ray, who must have described it, I think we might as well leave its old name of *Motacilla alba* with it, were it not that the bird not being actually *white*, it is somewhat incorrect. In a genus like this, where there are so many species that are in part white, or grey, or yellow, all names indicative of such colours might very well be discarded. I am not at all convinced, however, that our present bird and the Grey-backed Wagtail of the Continent are specifically distinct; for in every particular, except colour, they agree most accurately.

White Wagtail. Black-and-White Wagtail. Water Wagtail. Winter Wagtail. Dish-washer.

Motacilla alba, Linn. Syst. Nat. i. 331.—Motacilla Yarrelli, Bonap. Temm. Man. d'Ornith. iv. 620.—Motacilla Yarrelli, Pied Wagtail, MacGillivray, Brit. Birds, ii. 225.

The species or variety with which this has been confounded, not having with absolute certainty been found in Britain, although I think I have several times met with it, perhaps ought not to be included in this manual; but its description is given in case some of my readers should meet with it.

94. Motacilla Brissoni. Grey-and-White Wagtail.

Male in winter with the forehead, sides of the head, throat, and lower parts, white; a black crescent on the fore neck; the head, nape, and upper tail-coverts black; the back and sides ash-grey; wing-coverts blackish, the lower margined and tipped with white; quills greyish-black, edged with white; tail black, the two lateral feathers white, excepting part of their inner webs. Female similar, but with the black less extended on the nape, the wing-coverts and crescent on the fore neck dusky grey. Male, in summer, with the whole fore neck black, the upper parts of a darker grey. Female similar, but with the fore neck greyish-black. Young light grey above, greyish-white beneath, with a grey crescent on the fore neck.

Male, $7\frac{1}{4}$, .., $3\frac{2}{12}$, $\frac{6}{12}$, $\frac{12}{12}$, $\frac{6}{12}$, $\frac{3}{12}$.

The habits of this species are described as being precisely similar to those of Motacilla Yarrelli. M. Temminck considers the one to be merely a race or variety of the other. They differ in nothing but colour. Having procured a great number of specimens of both, and carefully compared them, I can find no other distinction. But this grey-backed bird is of extremely rare occurrence with us; and perhaps the individuals which I have examined may not belong to it, although they agreed in all respects with specimens from the neighbourhood of Paris. Although there may be some doubt, I am unwilling to eject the bird from our Fauna. Supposing Linnæus's name of *Motacilla alba*, and his specific description, to agree with this as well as with the last species, I yet think that as the one has been named after Mr Yarrell, "as a just tribute to his varied talents as a naturalist," the other may be named after Brisson, of whose talents as an accurate describer of birds nothing requires to be said.

Motacilla alba, Linn. Syst. Nat. i. 331.—Motacilla alba, Temm. Man. d'Orn. i. 255.—Grey-and-White Wagtail, MacGillivray, Brit. Birds, ii. 221.

95. Motacilla Boarula. Grey-and-Yellow Wagtail.

Male in winter with the head and back bluish-grey, tinged with green, the rump greenish-yellow, the throat greyish-white, the lower parts bright yellow. Female similar, but somewhat paler. Male in summer with a black patch on the throat, laterally edged with white bands. Female similar, but paler, and having the black on the throat tinged with grey. Young grey, tinged with green above, greyish-white on the throat, with a faint crescent of dull grey.

Male, $8\frac{1}{4}$, $10\frac{1}{4}$, $3\frac{1}{4}$, $\frac{11}{24}$, $\frac{10}{12}$, $\frac{13}{24}$, $\frac{3}{12}$. Female, $7\frac{10}{12}$, 10.

This species is permanently resident, although in most of the northern districts it disappears in winter. It frequents the margins of streams, pools, and lakes; and is generally distributed in the lower and more cultivated parts. Its food consists of insects, which it usually picks from the ground, although it often performs a short aerial excursion in pursuit of them. It generally builds in a rocky place near water, or among stones or grass. The nest is lined with wool, hair, and feathers. The eggs, from five to eight, are nine-twelfths long, seven-twelfths in breadth, greyish-white, spotted all over with faint greyish-brown.

Grey Wagtail. Yellow Wagtail.

Motacilla Boarula, Linn. Mant. 527.—Motacilla Boarula, Temm. Man. d'Ornith. i. 257.—Motacilla Boarula, Grey-and-Yellow Wagtail, MacGillivray, Brit. Birds, ii. 235.

GENUS LII. BUDYTES. QUAKETAIL.

The Quaketails are distinguished from the Wagtails chiefly by having the tail shorter, and the claws less arched and longer, that of the hind toe especially being much elongated.

Bill of moderate length, slender, straight, broader than high at the base, compressed toward the end; upper mandible with the dorsal line slightly declinate at the base, very slightly declinato-arcuate toward the end, the ridge narrow at the base, the edges slightly inflected, the notches very slight, the tip narrow and rounded; lower mandible with the dorsal line straight, the edges inflected, the tip acute. Tongue sagittate and papillate at the base, very slender, tapering to a slit point; œsophagus of moderate width; proventriculus oblong; stomach a gizzard of considerable power, oblong, compressed, its muscular coat thick, the epithelium dense, and slightly rugous; intestine short, of moderate width; cœca very small, cylindrical. Nostrils small, elliptical, pervious. Eyes of moderate size. Aperture of ear large, elliptical. Head ovato-oblong, small, narrow; neck rather short; body ovate, slender. Feet of ordinary length, slender; tarsus much compressed, with eight anterior scutella; toes of moderate length, much compressed, the first large, the lateral about equal, the third and fourth united at the base; claws long, extremely compressed, laterally grooved, slightly arched, that of the hind toe very long. Plumage soft and blended; bristles extremely small; wings long, of eighteen quills, the first three nearly equal, one of the inner secondaries very long; tail long, slender, rounded.

These birds form the transition from the Wagtails to the Pipits, which belong to the family of Alaudinæ. They feed on insects and larvæ; frequent open pastures, moist meadows, and ploughed fields, run with great celerity, often pursue insects on wing, and have a rapid undulated flight.

96. Budytes Rayi. Green-headed Quaketail.

Male with the head greenish-yellow, the cheeks and lower parts bright yellow, the back pale greenish-brown, the two lateral tail-feathers on each side partially white. Female similar, but with the head yellowish-green, and the lower parts paler. Young light brownish-grey above, the wings and tail dusky, the lateral feathers of the latter as in the adult, the lower parts cream-coloured, with an obscure dusky crescent on the fore neck.

Male, $6\frac{3}{4}$, $10\frac{1}{2}$, $3\frac{2}{12}$, $\frac{6}{12}$, $\frac{10}{12}$, $\frac{7}{12}$, $\frac{3}{12}$. Female, $6\frac{3}{4}$, 10.

This species, the Yellow Wagtail of British ornithologists, has been found to differ from the bird so called by those of the Continent, which has the head greyish-blue, although in all other respects precisely similar. Supposing then that Linnæus by his Motacilla flava meant the Grey-headed bird of the Continent, of which a very few individuals only have been met with in this country, Mr Gould and the Prince of Canino named our common bird *Budytes Rayi*. But Linnæus has referred to Ray and Willoughby, as well as to Gesner and Aldrovandi, and therefore his Motacilla flava includes both alleged species. If the present then be named after Ray, I think the other ought to be named after Mr Gould, who first distinguished the two. The Green-headed Quaketail is migratory, arriving in the end of spring, and disappearing in September. Its habits are similar to those of the Wagtails, but it is more addicted to searching for insects on plants. Its nest is lined with hair, and the eggs, four or five in number, are pale brown, sprinkled with dots of a darker tint.

Yellow Wagtail. Spring Wagtail. Summer Wagtail. Oat-seed Bird. Oatear.

Motacilla flava, Linn. Syst. Nat. i. 331.—Motacilla flaveola, Temm. Man. d' Ornith. iii. 183.—Budytes Rayi, Green-headed Quaketail, MacGillivray, Brit. Birds, ii. 212.

97. Budytes Gouldi. Blue-headed Quaketail.

Male with the head, hind neck, and ear-coverts greyish-blue; a white band over the eye; the upper parts yellowish-green, the lower bright yellow, the two lateral tail-feathers on each side partially white. Female similar, but with the head brownish-grey, the upper parts tinged with greyish-brown, and the throat white. Young light brownish-grey above, the wings and tail dusky, the lateral feathers of the latter as in the adult, the lower parts yellowish-white, with an obscure dusky crescent on the fore neck.

Male, $6\frac{3}{4}$, .., $3\frac{2}{12}$, $\frac{6}{12}$, $\frac{10}{12}$, $\frac{7}{12}$, $\frac{3}{12}$. Female, $6\frac{1}{2}$.

This species, generally dispersed over the Continent, where the other is not met with, has been found in a few instances in the south-eastern parts of England. The first specimen was obtained, in October 1834, near Colchester, by Mr H. Doubleday. I have compared numerous specimens of both species, and find intermediate shades of colour. As in the case of the two Wagtails, M. Temminck considers them merely as races.

Yellow Wagtail. Blue-headed Wagtail.

Motacilla flava, Linn. Syst. Nat. i. 331.—Motacilla flava, Temm. Man. d'Ornith. i. 260.—Budytes flava, Blue-headed Quaketail, MacGillivray, Brit. Birds, ii. 208.

FAMILY XX. ALAUDINÆ. ALAUDINE BIRDS, OR LARKS.

Body moderately stout or slender; neck rather short; head oblong, of ordinary size. Bill short, straight, somewhat conical, nearly as high as broad at the base, slightly compressed; upper mandible with its dorsal line deflected and slightly convex, the ridge narrow, the nasal sinus long and anteriorly rounded, the edges without notch, the tip rather acute; lower mandible with the angle rather narrow, the dorsal line very slightly convex, the tip rather acute; the gape-line straight. Mouth rather narrow; tongue of moderate length, narrow, at the base emarginate and papillate, the tip slit, and terminated by two small, bristly tufts; œsophagus of moderate width, nearly uniform; proventriculus oblong; stomach a remarkably powerful gizzard, of a roundish form, somewhat compressed, with thick lateral muscles, large tendons, and dense rugous epithelium, which is much thicker and nearly smooth opposite the muscles; intestine of moderate length, rather wide; cœca very small, cylindrical; rectum gradually dilated. Nostrils elliptical, basal, anteriorly marginate. Eyes of moderate size, eyelids feathered. Aperture of ear, large, roundish. Feet of moderate length; tarsus slender, compressed, with seven or eight dis-

tinct anterior scutella; toes slender, hind toe large, lateral about equal; anterior claws rather long, slender, compressed, slightly arched, acute, that of the hind toe extremely long and nearly straight. Plumage ordinary, the feathers ovato-oblong; frontal feathers encroaching on the nasal membrane; basirostral bristles small; wings long, broad, with eighteen quills; the first minute, the next three longest, one of the inner secondaries very long. Tail rather long, straight, deeply emarginate, of twelve rather narrow feathers.

The Larks are intimately allied to the Wagtails on the one hand, and to the Thrushes on the other, while in some respects they are approximated to the Buntings and Finches; but they do not belong to the Conirostral or Thick-billed Birds, as most authors suppose, for their bill is differently formed, and they never shell or husk seeds, but swallow them entire. They feed on insects, worms, and seeds, along with which they pick up particles of gravel and sand. They reside chiefly in the open fields and pastures, run with considerable celerity, generally in a half-crouching posture, and have a rapid and undulated flight, with a peculiar fluttering mode of flying while singing. Their song, although pleasing, is not generally melodious, but in several species is extremely protracted. They nestle on the ground, laying from four to six spotted eggs. Seven species occur in Britain.

GENUS LIII. ANTHUS. PIPIT.

Bill of moderate length, slender, straight, compressed toward the end; upper mandible with the dorsal line slightly declinate at the base, very slightly declinato-arcuate toward the end, the ridge narrow at the base, the sides convex, the notches slight, the tip narrow but rounded; lower mandible with the angle rather long, the dorsal line straight, the sides convex, the edges erect, the tip narrow; gape-line straight, a little deflected at the base. Mouth of moderate width; tongue very slender, sagittate and finely papillate at the base,

tapering to a slit point; œsophagus of moderate width, without crop; proventriculus oblong; stomach roundish, compressed, with distinct strong muscles, large tendons, and dense, rugous epithelium; intestine short; cœca very small and cylindrical. Nostrils oblong, pervious, in the lower and fore part of the rather large nasal depression, which is feathered behind. Eyes of moderate size. Aperture of ear large, transversely oval. Head small, narrow, ovato-oblong: neck rather short; body ovate, slender. Feet rather long; tarsus much compressed, with eight anterior scutella; toes rather long, slender, compressed; the first large, second and fourth about equal, third and fourth united at the base; claws long, slightly arched, extremely compressed, laterally grooved, acuminate. Plumage soft, on the upper parts rather compact, on the lower blended; wings rather long, of eighteen quills, the outer four nearly equal and longest, inner secondaries long and tapering; tail rather long, straight, emarginate.

The Pipits, although of a more slender form than the Larks, are very closely allied to them; as they also are to the Wagtails, which differ chiefly in being of a more delicate form, with the tail much longer. They are small, active, restless birds, remarkable for their sharp, rather weak notes, which they utter in a rapid manner, and for their habit of vibrating the body when standing. They frequent meadows and pastures; feed on worms, insects, and sometimes seeds; have a rapid, wavering, undulatory flight, nestle among the grass; and lay four or five dull-coloured spotted eggs.

98. Anthus pratensis. Meadow Pipit.

Upper parts olivaceous, spotted with dusky; lower parts brownish-white, anteriorly tinged with red; neck, sides, and fore part of breast marked with ovato-oblong, brownish-black spots; the first quill shorter than the fourth; the hind claw slightly arched, extremely slender, much longer than the first joint of its toe, and about five-twelfths and a half long; feet light yellowish-brown, claws dusky. In summer the colours are much faded, owing to the abrasion of the greenish margins of the feathers. The young have the upper parts more tinged with yellowish-green, and the dusky spots larger.

Male, 6, $9\frac{3}{4}$, 3, $\frac{5}{12}$, $\frac{9}{12}$, $\frac{8}{12}$, $\frac{3}{12}$. Female, $5\frac{10}{12}$, $9\frac{1}{2}$.

This species is very common and generally distributed, occurring in the interior as well as on the coast, and frequenting wet meadows, moors, commons, and pasture land. In winter it becomes occasionally gregarious, and betakes itself to marshy places, often to the sea-shore. Its ordinary flight is wavering and desultory. It feeds on worms, larvæ, pupæ, insects, and sometimes seeds. Its song is rather pleasant, composed of a series of sharp modulated notes, which it utters on wing, while descending with expanded wings and tail. The nest is usually placed on a grassy bank, or beside a tuft or turf, and is bulky, but neatly constructed, the exterior being formed of stems and leaves of grasses, the interior of finer straws, sometimes fibrous roots, and occasionally a good deal of hair. The eggs usually five, vary in size and colour, but are generally nine and a half twelfths long, seven and a half twelfths in breadth, brownish-white or grey, dotted and freckled with purplish-grey, reddish-brown, or dusky. Two broods are reared. It is to this species that the charge of the young Cuckoo is most frequently consigned.

Titlark. Titling. Common Titlark. Moss-cheeper.

Alauda pratensis, Lath. Ind. Ornith. ii. 493.—Pipit Farlouse, Anthus pratensis, Temm. Man. d'Ornith. i. 269.—Anthus pratensis, Meadow Pipit, MacGillivray, Brit. Birds, ii. 181.

99. Anthus arboreus. Tree Pipit.

Upper parts olivaceous, spotted with dusky; lower parts brownish-white, anteriorly tinged with reddish-yellow; the neck, sides, and fore part of the breast marked with ovato-oblong, brownish-black spots; the first quill longest; the hind claw strongly arched, rather shorter than the first joint, and about four and a half twelfths long; the feet and claws pale greyish-yellow. Young with the upper parts more tinged with green, and marked with darker spots.

Male, $6\frac{9}{12}$, $10\frac{1}{4}$, $3\frac{1}{2}$, $\frac{11}{12}$, $\frac{10}{12}$, $\frac{8}{12}$, $\frac{8}{12}$. Female, 6, 10.

Unlike the last species, which is permanently resident, this is a summer visitant, arriving in the end of April, and departing in September. It frequents the cultivated parts in the vicinity of woods and thickets; is generally dispersed in England, and occurs more sparingly in the south of Scotland. Its song, which is superior to that of the Meadow Pipit, is performed in the same manner. This species more commonly perches on trees, on which it also sometimes sings; but it

nestles on the ground, laying four or five eggs, which vary much in size and colour, but average nine-twelfths in length, and seven-twelfths in breadth, and are usually purplish or greyish-white, with spots, or dots, or blotches of dark red or purplish-brown.

Meadow Lark. Short-heeled Field Lark.

Alauda trivialis, Linn. Syst. Nat. i. 288.—Anthus arboreus, Temm. Man. d'Ornith. i. 271.—Anthus arboreus, Tree Pipit, MacGillivray, Brit. Birds, ii. 188.

100. Anthus obscurus. Dusky or Shore Pipit.

Upper parts olivaceous, obscurely streaked with dusky; a short yellowish band behind the eye; lower parts yellowish-grey; outer tail-feather pale grey in the terminal half of the outer web and the tip of the inner; the neck, sides, and fore part of the breast marked with oblong, undecided dusky, or olivaceous spots; the first and second quills longest; the hind claw moderately arched, about the same length as the first joint. In summer, when the margins of the feathers are abraded, the upper parts are of a nearly uniform greyish-brown tint. The young have the feathers of the upper parts dark brown, edged with oil-green, the lower parts more yellow than in the adult, and all streaked with olive-brown, except the abdomen.

Male, $6\frac{9}{12}$, $10\frac{3}{4}$, $3\frac{5}{12}$, $\frac{15}{24}$, $\frac{11}{12}$, $\frac{8}{12}$, $\frac{3}{12}$. Female, $6\frac{6}{12}$, $10\frac{1}{2}$.

This species, which is considerably larger, and of duller tints, than the preceding, is permanently resident, and generally distributed, but entirely confined to the sea-shore. It resembles the other species in its habits. The nest is placed on a grassy bank, or among moss, in some rocky place on the coast. The eggs, four or five, are ten-twelfths and a half long, eight-twelfths broad, greyish, or greenish-grey, freckled with purplish-grey. It was first described by Latham and Lewin under the name of Dusky-Lark, Alauda *obscura*, afterwards by Montagu under that of Alauda *petrosa*, or Rock-Lark. Being the same species as Anthus *aquaticus* of Temminck, that name was usually given to it; but latterly that ornithologist finds that he has confounded two distinct species, and proposes adopting for the present that of Anthus obscurus, for the first application of which he refers to Gmelin, the "bungling compiler," as some writers on birds, not very politely, but truly calls him. Now, perhaps, Montagu was the first who very clearly and intelligibly distinguished and described the bird; and yet I think Latham's brief description of it is better than the specific characters of hundreds of birds, as given by au-

thors; so that, on the whole, I think it ought to be called the Dusky Pipit, Anthus obscurus.

Rock Pipit. Rock Lark. Sea Lark. Dusky Lark.

Alauda obscura, Gmel. Syst. Nat. i. 801.—Alauda obscura, Lath. Ind. Ornith. ii. 494.—Alauda petrosa, Mont. Linn. Trans. & Ornith. Dict.—Anthus obscurus, Temm. Man. d'Ornith. iv. 628.—Anthus aquaticus, Shore Pipit, MacGillivray, Brit. Birds, ii. 194.

101. Anthus Spinoletta. Red-breasted Pipit.

Upper parts greyish-brown, very slightly tinged with olivaceous, the central part of each feather of a darker tint; a yellowish-white band from the bill over the eye; outer tail-feather with an oblique greyish-white band, including the greater part of the outer and the extremity of the inner web, the next feather with the tip greyish-white; lower parts yellowish-grey, the breast and lower part of the neck tinged with red; the sides and lower part of the neck, the fore part of the breast, and the sides of the body, marked with oblong greyish-brown spots; hind claw moderately arched, and rather longer than the first joint; bill and feet more slender than in Anthus obscurus.

This species being now for the first time introduced into our Fauna, it will not be judged inexpedient to present an extended description of it. Finding in one of my note-books a very particular account of two Pipits, obtained in the neighbourhood of Edinburgh, and examined by me on the 2d June 1824, when they were recent, and in the possession of the late Mr John Wilson, and which I found to be different from any with which I was then acquainted; and observing that M. Temminck, in the fourth volume of his manual, has described an Anthus which he had previously confounded with A. obscurus, under the common name of A. aquaticus; I was induced to examine all the Pipits I could find, and among others, those in the British Collection in the Museum of the University of Edinburgh, to which the great liberality of Professor Jameson has allowed me free access. Among these I find two specimens, agreeing with the two of my note-book, and also with A. aquaticus of M. Temminck, and with a specimen, marked "Saskatchewan, Dr Richardson," of the North American bird figured and described in the Fauna Boreali-Americana under that name. These two specimens, and Dr Richardson's, are specifically identical with Alauda rufa of Wilson, and Anthus ludovicianus of Lichtenstein, of which I have examined many

specimens in Mr Audubon's collection. The specimens in the museum I had, when assistant-conservator there, marked "Anthus pratensis, near Edinburgh, August 1824." They are known by Mr Carfrae to have been prepared by his brother, who at that time preserved objects, along with Mr Wilson, for the museum. Should they be individually different from those of my note-book, we have four specimens of this species obtained in the neighbourhood of Edinburgh in the same year. The following description is taken from the prepared specimens, the colours of the bill and feet being supplied from my notes.

Bill of moderate length, straight, slender, broadish at the base, much compressed toward the end; upper mandible with its dorsal line slightly declinate at the end, the ridge narrow, the edges slightly inflected, the notches very small, the tip sharp; lower mandible with the angle long and narrow, the dorsal line ascending and straight, the tip very narrow. Nostrils oblong, small, at the lower anterior margin of the nasal membrane, which is bare anteriorly. Eyes of moderate size. Head oblong, neck short, body slender. Feet rather long, very slender; tarsus much compressed, with seven anterior scutella; the hind toe with its first joint very long, its claw moderately arched and a little longer; the anterior toes slender, compressed, the third and fourth united at the base; claws rather long, arched, extremely compressed, broadly grooved, acute. Plumage very soft and blended; wings rather long; the four outer primaries almost equal, but the first longest, the fourth shortest; the second, third, and fourth, slightly cut out on the outer web toward the end; the inner primaries and outer secondaries emarginate; the inner three tapering; tail rather long, slightly emarginate. Bill dusky brown, the basal part of the lower mandible and basal margins of the upper flesh-coloured; feet and claws purplish-brown. The general colour of the upper parts is greyish-brown, with a slight tinge of olive, the margins of the feathers on the hind part being greenish; the central part of each feather of a darker tint; a distinct yellowish-white band from the bill over the eye; quills, coverts, and tail-feathers, brown; the tips of the secondary coverts and first row of small coverts pale brownish-grey; primary quills edged with greyish-white; secondary quills and their coverts with greenish-yellow; the greater part of the outer web, and an oblique patch on the inner web of the outer tail-feather, white; the margin of the terminal half of the outer web, and a small patch at the end of the next similar. The lower parts yellowish-grey; the throat, abdomen, and

lower tail-coverts unspotted; the lower part of the neck and the breast tinged with red; the sides and lower part of the neck, the fore part of the breast, and the sides of the body, marked with oblong greyish-brown streaks.

Length to end of tail $6\frac{3}{4}$ inches, extent of wings $11\frac{3}{4}$; bill along the ridge $\frac{6}{12}$; wing from flexure $3\frac{5}{12}$; tail $2\frac{8}{12}$; tarsus $\frac{10}{12}$; first toe $\frac{11}{12}$, its claw $\frac{5}{12}$; second toe $\frac{13}{12}$, its claw $\frac{2}{12}$; third toe $\frac{7}{12}$, its claw $\frac{3}{12}$; fourth toe $\frac{5}{12}$, its claw $\frac{2}{12}$.

Female.—The female is similar, but with the white of the lateral tail-feathers more tinged with grey, and of less extent.

Compared with Anthus obscurus, this species is more slender, its bill narrower and somewhat shorter, the tarsi and toes not nearly so stout, the hind claw more slender, and somewhat more arched; the colour of the upper parts more grey, the lateral tail-feathers with much more white; the lower parts entirely different in tint, the spots being besides more distinct and narrower in the present, which has also a pale band from the bill to behind the eye, whereas the other has only a faint yellowish band behind the eye. It has a greater resemblance to Anthus pratensis, from which it differs in being larger, in having the bill stouter, the tarsus longer, the hind claw shorter and more curved, the feet darker, the lower parts much more rufous; but the lateral tail-feathers are similarly coloured, and in some individuals the tints of the upper parts scarcely differ. Compared with a specimen from Dr Richardson, marked "Saskatchewan, No. 58," these specimens differ only in having less red on the breast, and the bill slightly longer. In short, our two birds seem to be specifically identical with it, and their description will be found to agree perfectly with that taken by me from American specimens in Mr Audubon's Synopsis.

It is probable that this species will be found not uncommon in the hilly and mountainous parts of Scotland.

Lark from Pennsylvania, Edwards, Gleanings, ii. 185, Pl. 297.—Alauda pennsylvanica, Briss. Ornith. suppl. 95.—Alauda spinoletta, Linn. Syst. Nat. i. 288.—Alauda ludoviciana, Gmel. Syst. Nat. i. 793.—Alauda rubra, Gmel. Syst. Nat. i. 794.—Alauda campestris, B. Lath. Ind. Ornith. ii. 495.—Alauda ludoviciana, Lath. Ind. Ornith. ii. 494.—Alauda rubra, Lath. Ind. Ornith. ii. 494.—Alauda rufa, Wils. Amer. Ornith. v. 89.—Anthus spinoletta, Bonap. Synops. of Birds of Amer. 90.—Anthus aquaticus, Richards and Swains, Fauna Bor. Amer. ii. 231, Pl. 44.—Anthus ludovicianus, Bonap. List of Birds of Eur. and N. Amer. 18.—Anthus ludovicia-

nus, Audub. Synops. 94.—Anthus aquaticus, Bechst, Temm. Man. d'Ornith. iv. 623.

102. Anthus Richardi. Richard's Pipit.

Upper parts olivaceous-brown, spotted with dark brown; lower parts dull white, the fore part of the neck beneath and a portion of the breast and sides tinged with reddish-yellow, and marked with oblong dusky spots; a line of similar spots from the base of the bill; two outer tail-feathers white, with a portion of the inner web brown; tarsi long; hind claw much longer than the first joint of the toe, and nearly straight.

Male, $6\frac{3}{4}$, .., $3\frac{5}{8}$.

This species, which is about the size of Anthus obscurus, from which it is distinguished by its different colours, as well as its more elongated tarsi, and hind claws, has occurred in England only in a very few instances. It was first made known as a British bird by Mr Vigors, who described and figured a young individual caught near London in October 1812. That acute ornithologist places it in a genus apart, to which he gives the name of *Corydalla*.

Anthus Richardi, Temm. Man. d'Ornith. i. 263; iii. 185.—Anthus Richardi, Richard's Pipit, MacGillivray, Brit. Birds, ii. 199.

GENUS LIV. ALAUDA. LARK.

Bill short, straight, somewhat conical, slightly compressed; upper mandible with the dorsal line declinate and slightly convex, the ridge narrow, the sides convex, the edges sharp, without notch, the tip rather acute; lower mandible with the angle rather narrow, the dorsal line ascending and very slightly convex, the edges direct, the tip rather acute; gape-line straight. Mouth rather narrow; tongue of moderate length, narrow, emarginate and papillate at the base, thin-edged, the tip slit, terminated by two small bristly tufts; œsophagus of moderate width, nearly uniform; proventriculus oblong; stomach a remarkably powerful gizzard, roundish, somewhat compressed, with very large muscles, and dense epithelium, which is smooth and thickened opposite the muscles; intestine of moderate length; cœca very small and cylindrical. Nostrils elliptical, basal, in the fore and lower part of the broad nasal membrane. Eyes of moderate size.

Ear large, roundish. Head oblong, of moderate size; neck rather short; body rather full. Feet of ordinary length; tarsus slender, compressed, with eight or nine anterior scutella; toes five, slender, the first stout, the second slightly longer than the fourth; the hind claw extremely long, being about double the length of the first joint, very slightly arched, much compressed, slender, acute. Plumage ordinary; feathers on the upper part of the head rather long; bristles at the base of the bill; wings long, broad, of eighteen quills, the first minute, the next three longest; the inner secondaries elongated; tail rather long, straight, deeply emarginate.

The genus Alauda, most intimately allied to Anthus, passes into Plectrophanes, which belongs to the Buntings, and has various other affinities. The Larks are generally distributed on the Old Continent, and one species occurs in the northern parts of both. They prefer open places, search the fields and pastures for worms, larvæ, insects, and seeds. In winter they are chiefly granivorous, and their gizzard is more muscular than that of any other birds of the order to which they belong. They nestle on the ground, lay from four to six spotted eggs, and feed their young with worms and insects. Some of the species are remarkable for the variety of their notes and the prolongation of their song. Three species occur with us, but of these one is merely a straggler.

103. Alauda arvensis. Sky Lark.

Upper parts light reddish-brown, streaked with blackish-brown; fore neck light reddish-brown, spotted with brownish-black, the sides streaked, the rest of the lower parts dull white; an obscure brownish-white band over the eye; the first quill extremely small and acute, the second longest; quills chocolate-brown, tail-feathers darker, the outer with most of its outer web and an oblique portion of the inner white, as is the greater part of the outer web of the next. Young with all the feathers of the upper parts dusky, tipped and margined with light yellowish-grey.

Male, $7\frac{1}{12}$, $14\frac{3}{4}$, $4\frac{1}{2}\frac{0}{0}$, $\frac{6}{12}$, 1, $\frac{8}{12}$, $\frac{4}{12}$. Female, $6\frac{1}{12}\frac{0}{0}$, 13.

Perhaps none of our native birds has attracted more notice than the Sky Lark, on account of its being generally distributed, and rendering itself conspicuous by its habit of rising, with a fluttering and somewhat spiral motion, to a great height in the air while performing its delightful song, which is protracted

beyond that of any bird known. The nest is formed in a hollow scraped in the ground, among corn, in a hay field, or in an open pasture, and is composed of withered grass, rather loosely put together, and lined with finer fibres. The eggs, four or five, vary much in size and colour, but are generally ten and a half twelfths long, eight and a half twelfths in breadth, greenish-grey, freckled with greyish-brown. Toward the end of autumn Larks congregate, often in very large flocks, and search the stubble fields for seeds of various kinds, on which chiefly they feed during the winter. In February or March these flocks break up. Vast numbers are sent to our markets in winter, this species forming an esteemed article of food. An outcry has been raised against shooting Blackbirds and Thrushes, it being alleged that their musical faculties ought to exempt them from persecution. If so, why should not the Lark be protected, and its devourers held as barbarians?

Common Lark. Field Lark. Laverock.

Alauda arvensis, Linn. Syst. Nat. i. 287.—Alauda arvensis, Temm. Man. d'Ornith. i. 281.—Alauda arvensis, Sky-Lark, MacGillivray, Brit. Birds, ii. 163.

104. Alauda arborea. Wood Lark.

Upper parts light reddish-brown, streaked with brownish-black; the fore neck reddish-white, streaked with brownish-black, the sides light brown, the rest of the lower parts yellowish-white; a distinct yellowish-white band over the eye, continuous with a patch of the same on the nape; the first quill minute, the fourth longest. Young with the upper parts yellowish-brown, the feathers with a longitudinal dusky band; lower parts pale greyish-yellow, sides and fore part of neck with angular dusky spots; part of the breast tinged with yellowish-red.

Male, $6\frac{2}{12}$, $12\frac{1}{2}$, $3\frac{10}{12}$, $\frac{6}{12}$, $\frac{10}{12}$, $\frac{6}{12}$, $\frac{4}{12}$. Female, 6, 12.

The Wood-Lark, which is considerably smaller than the Sky-Lark, and distinguished from it chiefly by having a whitish band surrounding the upper part of the head, and much enlarged on the nape, is not uncommon in the southern, western, and midland districts of England, but of very rare occurrence in the northern. It does not clearly appear that it has been met with in Scotland; but it is partially distributed in Ireland. Its habits are similar to those of the last species, which it is said to excel in the melody of its song. It frequently perches on trees and bushes, which the other very

rarely does. The nest is placed on the ground among grass or corn, and is composed externally of dry grass, and lined with finer blades intermixed with hair. The eggs, four or five, are nine-twelfths long, seven-twelfths in breadth, pale yellowish-brown, freckled with umber or greyish-brown.

Alauda arborea, Linn. Syst. Nat. i. 297.—Alauda arborea, Temm. Man. d'Ornith. i. 282.—Alauda arborea, Wood-Lark, MacGillivray, Brit. Birds, ii. 174.

105. Alauda alpestris. Shore Lark.

Male in winter with the upper parts pale brownish-red, streaked with dark brown; the lower parts white; a recurved band on the head, a band from the bill to the eye, and a large patch on the fore neck black, but the feathers tipped with reddish-white; the throat and a band over the eyes yellow. Male in summer with the bands on the head and neck pure black; the throat and band over the eyes white. Female with the upper parts as in the male, the lower greyish-white.

Male, $7\frac{1}{2}$, $13\frac{3}{4}$, $4\frac{7}{12}$, $\frac{7}{12}$, $\frac{11}{12}$, $\frac{7}{12}$, $\frac{4}{12}$. Female, $7\frac{1}{4}$.

An individual was shot near Sherringham in Norfolk, in March 1830; another was killed in Lincolnshire; and Mr Yarrell makes mention of a pair that were obtained together on an extensive down in Kent. This species occurs in the northern parts of Europe, Asia, and America, migrating into the temperate regions in autumn.

Horned Lark.

Alauda alpestris, Linn. Syst. Nat. i. 289.—Alauda alpestris, Temm. Man. d'Ornith. i. 279.—Alauda alpestris, Shore-Lark, MacGillivray, Brit. Birds, ii. 159.

FAMILY XXI. PARINÆ. PARINE BIRDS OR TITS.

The Tits are small birds, somewhat allied to the Reguli, as well as to the Garruli, although, from their diminutive size, they seem at first sight to have little affinity to the latter. Their general form is moderately full; their head large, broadly ovate, and convex. Bill short, straight, tapering, hard, with its outlines more or less convex, the mandible thin-edged, and rather obtuse, the upper destitute of notch. The tongue is short, narrow,

with the tip abrupt and furnished with four bristles; the œsophagus narrow, without crop; the stomach roundish, somewhat compressed, its lateral muscles moderate, its epithelium dense and rugous; intestine short, of moderate width; cœca small and cylindrical. Trachea with four inferior laryngeal muscles. Nostrils rather small, roundish, and concealed by reversed bristly feathers. Eyes of moderate size. Aperture of ear large and roundish. Tarsus of moderate length, rather stout, and distinctly scutellate; toes large, especially the first, the anterior united as far as their second joint, the outer considerably longer than the inner; claws strong, compressed, arched, acute. Plumage soft, loose, and full; wings rather short, concave, rounded; tail more or less arched, always narrow, and of twelve feathers.

The Parinæ inhabit forests, woods, and thickets, where they search for insects and larvæ among the foliage, and in the crevices of the bark, clinging to the twigs, and using every possible variety of attitude. They also feed in part on small seeds, sometimes even on flesh, suet, and various other substances. They advance on the ground by hopping, have a rapid, undulated flight, are bold and courageous, especially in defence of their nests, which are large, formed of moss and lichens, and lined with feathers. The eggs are generally numerous, whitish, with brown or red spots. Species occur on both continents, and of the six that inhabit the British Isles none are migratory.

GENUS LV. PARUS. TIT.

Bill short, straight, somewhat conical, strong, compressed; upper mandible with the dorsal line convex and declinate, the edges with a slight festoon near the base, but without notch, the point thin-edged, rather blunt when viewed vertically; lower mandible with the angle short, the dorsal line ascending, and more convex than the upper, the edges a little inflected, the tip rather acute; gape-line straight. Mouth very narrow; upper mandible with three prominent lines;

tongue short, narrow, abrupt at the end, with four bristles; œsophagus of uniform and moderate width; stomach a moderately strong gizzard, elliptical, with the muscles and tendons rather large, the epithelium longitudinally rugous; intestine short, rather wide; cœca very small and cylindrical; rectum moderately enlarged toward the end. Nostrils small, roundish, in the fore part of the short nasal membrane, and concealed by reversed stiffish bristle-tipped feathers. Eyes small, eyelids feathered. Aperture of ear large and roundish. Feet of ordinary length, rather strong; tarsus compressed, with seven very broad anterior scutella; toes rather large, the first proportionally very stout, the anterior united at the base, the second considerably shorter than the fourth; claws long, much arched, extremely compressed, laterally grooved, high, and tapering to an extremely acute point. Plumage extremely soft, loose, and blended; the feathers on the upper part of the head compact and glossy; no distinct bristles; wings rather short, concave, very broad, rounded, with nineteen quills, the first very short, the fourth and fifth longest; tail of moderate length, or rather long, narrow, even or a little emarginate.

The Tits are all of very small size, the largest not exceeding a House Sparrow in bulk, and some not more than four inches in length. Although essentially insectivorous, they also feed on seeds, occasionally flesh, and various other articles. In severe weather they frequent the neighbourhood of houses, but their favourite haunts are woods and thickets. They are extremely active and bold, have a rapid flight, utter various shrill cries, nestle in holes, in walls, or trees, on branches, or in cavities in the ground, and lay numerous eggs of a white colour, dotted with red or brown. They are not only social among themselves, but frequently mix with Kinglets, Creepers, and Nuthatches.

106. Parus Fringillago. Ox-eye Tit.

The head, fore part of the neck, a transverse band on its sides, and a longitudinal band on the breast and abdomen, black glossed with blue; cheeks and part of the nape white; back yellowish-green; breast and sides yellow. Young simi-

lar to the adult, but with the tints much duller, and the dark medial band on the breast less extended.

Male, $6\frac{1}{4}$, 10, 3, $\frac{5}{12}$, $\frac{11}{12}$, $\frac{6}{12}$, $\frac{4}{12}$. Female, $6\frac{1}{12}$, $9\frac{12}{12}$,

This species, which is less gregarious than the rest, is generally distributed in the wooded and cultivated districts. It frequents woods, thickets, and occasionally gardens; feeds on insects, pupæ, larvæ, seeds, and buds; is extremely active; and in spring and summer is remarkable for its curious song, which resembles the sounds produced by sharpening the teeth of a saw. It sometimes feeds on flesh, and is said to attack small or young birds, splitting their skull with its bill. When wounded and laid hold of, it bites most vigorously; and should its nest be attacked by other birds, it defends it with great energy. It is usually placed in the hole of a wall; or in one formed expressly in the wood of a decayed tree, and is composed of moss, leaves, shreds of bark, wool, hair, and feathers. The eggs, about six, are nine-twelfths long, seven-twelfths in breadth, bluish-white, dotted with red.

The reason why I have adopted one of the old names given to this species is, that relative terms applied to birds at a time when all the species of a genus are not known, ultimately turn out incorrect. Thus, the present species is not the largest known, and therefore cannot with truth be named *major;* Picus *major* and Picus *minor* of authors are greatly excelled, either way, by many woodpeckers.

Great Titmouse. Great Black-headed Tom Tit. Blackcap. Ox-eye.

Parus major, Linn. Syst. Nat. i. 341.—Parus major, Temm. Man. d'Ornith. i. 287.—Parus Fringillago, Ox-eye Tit, MacGillivray, Brit. Birds, 425.

107. Parus cœruleus. Blue Tit.

Upper part of the head light blue encircled with white; a line of dusky blue from the bill to the eye, another from the eye to the occiput, where it meets a band of dark blue encircling the neck, throat blackish-blue, cheeks white; back light yellowish-green, lower parts pale greyish-yellow, the middle of the breast dull blue. Female much less brightly coloured. Young with the colours similarly distributed, but much paler.

Male, $4\frac{3}{4}$, $7\frac{3}{4}$, $2\frac{1}{2}$, $\frac{3}{12}$, $\frac{9}{12}$, $\frac{11}{12}$, $\frac{3}{12}$. Female, $4\frac{7}{12}$, $7\frac{1}{2}$.

This beautiful and lively species is very common in most districts, frequenting gardens, orchards, and woods, feeding on insects, larvæ, seeds, and various other substances. In winter it is often seen about farm-yards, doors, and dunghills,

where it picks grain, other farinaceous matters, suet or flesh, and in spring commits havoc among the buds, probably in search of insects. The nest, which is placed in the chink of a wall, or under the eaves or thatch, or in a hole in a tree, is composed of moss, grass, and wool, and lined with hair and feathers. The eggs, from six to ten or more, are seven and a half twelfths long, six-twelfths in breadth, reddish-white, irregularly spotted with light red. This species is often found in winter traversing the woods in company with the Coal-Tit and Golden-crested Kinglet. It clings to the twigs in all sorts of attitudes, has a direct rapid flight, and in spring a variety of notes, of which the most common resemble the syllables chicka, chicka, chicka, chee, chee.

Blue Titmouse. Blue-cap. Blue-bonnet. Tom-tit. Hickwall. Billy-biter. Ox-eye.

Parus cœruleus, Linn. Syst. Nat. i. 341.—Parus cœruleus, Temm. Man. d'Ornith. i. 289.—Parus cœruleus, Blue Tit, MacGillivray, Brit. Birds, ii. 431.

108. Parus ater. Coal Tit.

Head and neck glossy bluish-black, with a broad patch of white on the cheek and side of the neck, and a large white spot on the nape; back grey, breast white, hind parts brownish-yellow; two white bars on the wing, formed by the tips of the secondary coverts, and first rows of small coverts. Young similar, but with the tints duller.

Male, $4\frac{1}{4}$, $7\frac{4}{12}$, $2\frac{4}{12}$, $\frac{4}{12}$, $\frac{8}{12}$, $\frac{5}{12}$, $\frac{3}{12}$. Female, $4\frac{1}{4}$, $7\frac{3}{12}$.

The favourite abode of this species is in forests and plantations of fir and pine, where it wanders about in troops, often composed of a vast number of individuals, and usually associating with the Gold-crowned Kinglet, Long-tailed Mufflin, and Blue Tit. But although partial to fir woods, it also frequents those of birch, oak, and alder. Its flight is short and even, its cry a sharp cheeping note, and in searching for its insect food, it exhibits the greatest activity, clinging to the twigs in every kind of position. Its nest, which is placed in a hole, or crevice in a wall or decayed tree, is composed of moss intermixed with hair, and lined with wool and hair. The eggs, from five to eight, are seven-twelfths long, nearly six-twelfths in breadth, white, with light red spots and dots.

Cole Tit. Coal Titmouse. Blackcap.

Parus ater, Linn. Syst. Nat. i. 341. Parus ater, Temm. Man. d'Ornith. i. 288.—Parus ater, Coal Tit, MacGillivray, Brit. Birds, ii. 440.

109. Parus palustris. Marsh Tit.

Head and throat brownish-black, a broad patch of greyish-white on the cheek and side of the neck; back greyish-brown, lower parts brownish-yellow. Easily distinguished from the Coal Tit by its not having any white on the nape or wing-coverts. The young differ from the adult only in having the tints duller, the upper parts more tinged with green, and the black of the head approaching to a sooty brown.

Male, $4\frac{1}{2}$, $7\frac{3}{4}$, $2\frac{5}{12}$, $\frac{9}{24}$, $\frac{10}{12}$, $\frac{9}{24}$, $\frac{3}{12}$.

This species which does not confine itself to marshy places, as its name implies, is more common in England than in Scotland. Its habits are similar to those of the last species; but in autumn and winter it feeds partly on the seeds of Syngenesian plants. The nest is placed in the hole of a decayed tree, and is composed of moss, wool, hair, and vegetable fibres, and lined with the down of willows and other plants. The eggs, from six to eight, are white with red dots.

Marsh Titmouse. Black-headed Tom-tit.

Parus palustris, Linn. Syst. Nat. i. 341.—Parus palustris, Temm. Man. d'Ornith. i. 291.—Parus palustris, Marsh Tit, MacGillivray, Brit. Birds, ii. 445.

110. Parus cristatus. Crested Tit.

Occipital feathers elongated, pointed, and slightly recurved, forming a conspicuous crest; feathers of the head black, with white margins; cheeks white; space behind the eyes, a decurved band over the hind neck, and a large triangular spot on the fore neck, black; upper parts grey, tinged with yellowish-brown; breast greyish-white; sides, abdomen, and lower tail-coverts, pale yellowish-brown.

Male, $4\frac{7}{12}$, 8, $2\frac{1}{2}$, $\frac{5}{12}$, $\frac{10}{12}$, $\frac{5}{12}$, $\frac{3}{12}$. Female, $4\frac{6}{12}$, 8.

This species has hitherto been found only in the fir woods of the north of Scotland. I have seen and described two specimens shot in Strathspey by Mr Th. Macpherson Grant.

Crested Titmouse.

Parus cristatus, Linn. Syst. Nat. i. 340.—Parus cristatus, Temm. Man. d'Ornith. i. 290.—Parus cristatus, Crested Tit, MacGillivray, Brit. Birds, ii. 450.

GENUS LVI. MECISTURA. MUFFLIN.

This genus differs from Parus chiefly in the great length of the tail, and in having the tip of the upper mandible con-

siderably elongated and decurved. Bill very short, rather stout, compressed; upper mandible with its dorsal line convex, the ridge narrow, the sides convex and sloping, the edges direct, without notch or sinus, the tip acute, considerably decurved, and rather elongated; lower mandible with the angle very short, the dorsal line convex, the tip acute; gape-line a little arched. Tongue very slender, subsagittate at the base, abruptly terminated, with four bristles; œsophagus of uniform width; stomach roundish, compressed, moderately muscular, with the epithelium rugous; intestine short, and of moderate width; cœca very small; cloaca globular. Head broadly ovate, very large; neck short; body rather full. Nostrils small, round, and concealed by the feathers. Eyes small; eyelids with very broad, crenate, bare margins. Feet of ordinary length, rather slender; tarsus compressed, with seven large anterior scutella; toes rather slender, first proportionally large, anterior toes united at the base; claws long, moderately arched, extremely compressed, laterally grooved, very acute. Plumage exceedingly soft, loose, and elongated; wings of moderate length, concave, rounded; first quill small, fourth and fifth longest; tail very long, straight, graduated.

111. Mecistura longicaudata. Long-tailed Mufflin.

Tail very long; plumage extremely soft and tufty; head, throat, and breast, white; a broad band over the eye, the nape, and the back, black; scapulars reddish; tail black, the three lateral feathers on each side externally white. Young duller, without red on the scapulars.

Male, $5\frac{10}{12}$, $6\frac{9}{12}$, $2\frac{5}{12}$, $\frac{3}{12}$, $\frac{15}{24}$, $\frac{4}{12}$, $\frac{2}{12}$.

This singular looking bird, the most diminutive of our British species except the Kinglets, is generally distributed in the wooded and cultivated districts. Its habits are similar to those of the Tits, with which it occasionally associates; but it differs from them in attaching to the branches its nest, which is of an oblong form, composed of moss and lichens, lined with feathers, and having a small aperture near the top. The eggs are numerous, next in size to those of Regulus auricapillus, being from six to seven-twelfths long, and about five-twelfths in breadth, white, generally marked with numerous faint red dots at the larger end. I have seen a nest in which were sixteen young ones.

Bottle Tom. Bottle Tit. Long-tailed Mag. Huck-muck. Poke-pudding. Mum-ruffin.

Parus caudatus, Linn. Syst. Nat. i. 342.—Parus caudatus, Temm. Man. d'Ornith. i. 296.—Mecistura longicaudata, Long-tailed Muffin, MacGillivray, Brit. Birds, ii. 454.

FAMILY XXII. AMPELINÆ. AMPELINE BIRDS, OR CHATTERERS.

The family of Piprinæ, of which we have no representatives in Britain, is closely allied to that of Parinæ on the one hand, and on the other to the Ampelinæ, of which only a single species occurs accidentally with us.

In their general form the Ampelinæ are rather full and compact, with the neck short, the head oblong, and of moderate size. Bill shorter than the head, broad at the base, and having a triangular form when viewed from above; upper mandible with the dorsal line decurved, the ridge narrow, the edges direct, the notches small, but distinct, the tip small and deflected; lower mandible smaller, with the angle wide, the dorsal line slightly convex, the edges rather inflected, the tip very narrow. Feet small; tarsi generally short; toes small or moderate, the first strongest, and considerably larger than the lateral, of which the outer is a little longer, the soles flattened; claws of moderate size, well curved, compressed, laterally grooved, very acute. Plumage soft and blended; wings of moderate length, or rather long, with nineteen quills; tail short or moderate, of twelve feathers.

The Ampelinæ are chiefly natives of warm climates, especially of those of America. Their food consists of soft fruits and insects; but their habits are little known. From the width of their mouth and the triangular form of their bill, as well as their small feet, they might perhaps be as well referred to the Myiotherinæ as to the Cantatrices.

GENUS LVII. BOMBYCILLA. WAXWING.

Bill short, straight, broad at the base, compressed toward the end; upper mandible with the dorsal line convex, the ridge narrow, the edges sharp and overlapping, the notches distinct, the tip small, declinate, rather acute; lower mandible smaller, with the angle wide, the dorsal line convex, the edges somewhat inclinate, the tip acute, ascending, with a small sinus; gape-line straight. Tongue short, triangular, sagittate and papillate at the base, concave above, with the tip horny and deeply slit; mouth wide; œsophagus very wide, enlarged about the middle; stomach small, moderately muscular, roundish, with a dense, rugous, epithelium; intestine short, and excessively wide; cœca very small, oblong. Nostrils large, oval. Eyes of moderate size. Head ovato-oblong; neck short; body moderately full. Legs short; tarsus compressed, with seven scutella; toes of moderate size, outer slightly adherent at the base, and a little longer than the inner; claws moderate, arched, compressed, laterally grooved, acute. Plumage very soft and blended; head with a conspicuous tuft; wings rather long, pointed, the first and second quills longest; secondaries abruptly rounded, with the shaft prolonged into a narrow, oblong, coloured, horny appendage; tail of moderate length, nearly even.

The Waxwings, so named on account of the little appendages to the wings, in colour resembling red sealing-wax, belong to the arctic regions of both continents.

112. Bombycilla garrula. Black-throated Waxwing.

General colour of the plumage light greyish-brown, shaded behind into ash-grey; forehead and lower tail-coverts brownish-orange; throat and a band from the nostrils to the occiput black; primary coverts tipped with white; primaries with a yellow, secondaries with a white spot, at the end of the outer web; tail greyish-black, tipped with yellow.

Male, 9, 16, $4\frac{9}{12}$, $\frac{6}{12}$, $\frac{9}{12}$, $\frac{7}{12}$, $\frac{7}{24}$. Female, $8\frac{1}{4}$.

This beautiful bird is only an occasional or accidental visiter, appearing in winter, generally in large flocks, and feeding on the berries of the hawthorn and mountain-ash. At that season it is said to be generally dispersed over the Continent; but in summer it retires northward.

Bohemian Chatterer. European Waxwing.

Ampelis garrulus, Linn. Syst. Nat. i. 297.—Bombyciphora garrula, Temm. Man. d'Ornith. i. 124.—Bombycilla garrula, Black-throated Waxwing, MacGillivray, Brit. Birds, iii. 533.

The birds which form the next ordinal group are all very easily recognised by their stout conical bill. In the structure of their skeleton, wings, feet, and organs of sense, they differ very little from the Cantatrices and Vagatrices, which they further resemble in having four pairs of inferior laryngeal muscles. Their digestive apparatus is also similar, but with this difference that the œsophagus is dilated into a kind of crop, or rather half-crop, inclining to the right side, and sometimes curving round the neck behind. All our small Finch-like birds belong to this group, to which I have elsewhere given the name of Huskers, they being in fact, the only birds that remove the shell or husk of seeds in their bill, before swallowing them. The only word that I can find expressive of this is *Deglubitores*, to which a *candid* critic has been pleased to add another syllable, making it Deglubi*bi*tores. If the reader can find a better term, I will gladly adopt it.

ORDER VIII. DEGLUBITRICES. HUSKERS.

Connected with the Larks on the one hand, with the Starlings and Crows on the other, as well as with the Buntings and Finches, is a tribe of birds nearly peculiar to America, and bearing the name of Icterinæ: but of which we have no representatives in Britain. Allied to them are the Emberizinæ, or Buntings, which gradually pass into the Passerinæ, or Sparrows; of both of which we have several species. A fourth group, the Tanagrinæ, allied to the last, and in some respects to the Pi-

prinæ, already alluded to, presents similar general characters; but of this tribe we are entirely destitute. These birds collectively form the order above designated, of which the characters are as follows.

Bill short or moderate, conical, with the sides convex, the edges sharp and inflected, the tip acute, the upper mandible with scarcely any notch or sinus near the extremity. Tongue moderate, slender, compressed, grooved above, horny toward the end, with the tip slit; œsophagus rather wide, and on the middle of the neck dilated into a crop of moderate size, inclining to the right side; stomach a powerful gizzard, of a roundish form, compressed, with two large lateral muscles; its cuticular lining dense, tough, and longitudinally rugous; intestine short, or of moderate length; cœca very small, cylindrical, adnate; cloaca not dilated. Trachea with four pairs of inferior laryngeal muscles. Nostrils roundish at the base of the bill. Eyes of moderate size. Aperture of ear large. Feet with four toes, placed in the same plane, the first stouter, the three anterior slightly spreading; claws rather long, arched, compressed, tapering to a fine point. Wings of moderate length, rather pointed, the outer three quills longest; tail of twelve feathers.

The Deglubitrices, of which species occur in all parts of the world, live chiefly on seeds or other vegetable substances; but also partly on insects and worms. They generally advance by leaping, but a few walk in the manner of the Crows and Starlings. Their flight is rapid, light, generally undulated. Almost all of them are gregarious in winter, some at all seasons. Of the twenty-five species which occur with us, seventeen are permanently resident, all the rest winter visitants from the north, excepting one straggler from the south. Like the

Cantatrices, they form an elaborate nest, and generally lay about five eggs. The young, at first blind and naked, are fed with insects and soft food. Most of these birds have a modulated song, which, however, is much inferior to that of the Cantatrices.

FAMILY XXIII. EMBERIZINÆ. EMBERIZINE BIRDS, OR BUNTINGS.

Bill short, stout, conical, pointed; upper mandible smaller and generally narrower, with the dorsal line nearly straight, the sides convex, the edges inflected; lower with the angle short and broad, the dorsal line nearly straight, the back rounded, the edges sharp and involute; gape-line ascending obliquely for nearly half its length, then direct. Internally, the upper mandible is very narrow, with a hard, generally oblong, knob, and toward the end flat, with three prominent lines; tongue compressed, deep, with two bristly points; œsophagus dilated into a crop; proventriculus oblong; stomach a strong, roundish, compressed gizzard, with large muscles, and dense, rugous epithelium; intestine of moderate length and width; cœca very small, cylindrical, adnate. Nostrils oblong, in the lower and fore part of the short nasal depression. Eyes of moderate size, eyelids feathered. Aperture of ear rather large. Head rather large, ovate, neck short. Tarsi rather short, compressed, with seven anterior scutella; toes moderate, compressed, with long scutella; the first toe strong, the lateral nearly equal, third and fourth united at the base; claws arched, compressed, acute. Plumage generally blended, but firm; wings of ordinary length, with eighteen quills, the second and third longest; tail moderate or rather long, straight, emarginate.

The Emberizinæ, of which two genera occur with us,

have a strong, rapid, rather undulated flight; move on the ground by short leaps, frequent the open fields, retreating to trees and bushes when disturbed. The nest is rather bulky, compact, deep, and placed on the ground or in bushes. The eggs, about five, are marked with spots or lines.

GENUS LVIII. EMBERIZA. BUNTING.

Bill short, conical, strong, somewhat pentagonal at the base, compressed toward the end; upper mandible narrower, with the edges inflected, lower with the edges involute; gape-line ascending obliquely for nearly half its length. Mouth rather narrow; upper mandible internally with a sudden bend about the middle, anterior to which is a prominent knob; tongue sagittate and papillate at the base, compressed, with two short bristly points; œsophagus dilated about the middle; proventriculus oblong; gizzard roundish, compressed, with very strong lateral muscles, large tendons, and dense, rugous epithelium; intestine of moderate length and width. Nostrils oblong. Eyes of moderate size. Aperture of ear rather large. Head ovate; neck short; body moderately stout. Legs rather strong, of moderate length or rather short; tarsus compressed, with seven distinct scutella; toes moderate, compressed; claws arched, compressed, indistinctly grooved, acute. Plumage blended; wings moderate, rounded, the second and third longest; tail moderate or rather long, emarginate.

Four species of this genus occur in Britain.

113. Emberiza Miliaria. Corn Bunting.

In both sexes the upper parts light yellowish-brown, streaked with blackish-brown, each feather being of that colour along the shaft; lower parts pale yellowish-grey, each feather of the fore neck tipped with a triangular spot of brownish-black, the fore part of the breast and the sides with more elongated and fainter spots. Young similar to the adult, but with the upper parts paler, and the dark markings of the lower more elongated.

Male, $7\frac{1}{2}$, 13, 4, $\frac{11}{24}$, $\frac{11}{12}$, $\frac{19}{24}$, $\frac{7}{24}$. Female, $7\frac{1}{4}$, $12\frac{3}{4}$.

The Corn Bunting is generally distributed, permanently resident; frequents open pastures, grass and corn fields; perches on tall herbaceous plants, bushes, or trees, the male there chanting his singular song, which is a hurried repetition of short unharmonious notes, terminated by a protracted one. It feeds on seeds of grasses, polygona, rumices, cereal plants, and coleopterous insects, in winter becomes extremely fat, and as an article of food is equal to the Lark. At this season it generally forms flocks, which break up about the middle of spring. The nest, composed of dry stalks and blades of grass, with a lining of fibrous roots and hair, is placed on the ground among grass or herbage. The eggs are four or five, ten and a half twelfths long, nearly eight-twelfths in breadth, greyish-white, patched and spotted with pale greyish-purple, and marked with spots, dots, and curved lines of blackish-brown.

Bunting. Common Bunting. Sparrow.

Emberiza Miliaria, Linn. Syst. Nat. i. 308.—Emberiza Miliaria, Temm. Man. d'Ornith. i. 306.—Emberiza Miliaria, Corn Bunting, MacGillivray, Brit. Birds, i. 440.

114. Emberiza Citrinella. Yellow Bunting.

Back and wings bright red, the central part of each feather brownish-black. Male with the head and throat bright yellow, the feathers of its upper part tipped with black, the breast brownish-red. Female with the yellow of the head obscured by dusky and brown, the breast pale greyish-brown. Young dull yellowish-brown, streaked with black above, yellowish-grey beneath, the breast and sides streaked with brown.

Male, $7\frac{1}{8}$, 11, $3\frac{1}{2}$, $\frac{9}{24}$, $\frac{9}{12}$, $\frac{7}{12}$, $\frac{4}{12}$. Female, $6\frac{11}{12}$, $10\frac{3}{4}$.

This species is very widely distributed, being in most of the cultivated and wooded districts of Britain and Ireland a very common and familiar bird, and a permanent resident. In autumn it forms large straggling flocks, which through the winter often mingle with Chaffinches, Green Linnets, Sparrows, and other species, in open weather resorting to the fields, and perching at intervals in the hedges and bushes, as well as on trees. When the ground is covered with snow, they congregate about houses, and frequent corn-yards. Their flight is undulated, light, strong, and graceful, and they alight abruptly, jerking out their tail-feathers. In spring and summer the male chants a doleful sort of ditty, composed of a few short shrill notes, concluding with a protracted one. Their food consists of seeds of cereal plants, especially oats, grasses, chickweeds, polygona, and others. The nest, composed of coarse grasses

and twigs, and neatly lined with fine grass, fibrous roots, and hair, is placed on the ground or in the lower part of a bush. The eggs, four or five, are purplish-white, marked with linear and angular streaks, and a few irregular dots of black; their length about ten-twelfths, their breadth eight-twelfths.

Yellow Hammer. Yellow Yeldring or Yoldring. Yellow Yowley. Yellow Yite, Yeldrock, or Yolkring. Skite. Devil's Bird.

Emberiza Citrinella, Linn. Syst. Nat. i. 309.—Emberiza Citrinella, Temm. Man. d'Ornith. i. 304.—Emberiza Citrinella, Yellow Bunting, MacGillivray, Brit. Birds, i. 445.

115. Emberiza Cirlus. Cirl Bunting.

Male with the back and wings bright red, the central part of each feather brownish-black, the head and throat black; a band over the eye, another beneath it, and a crescent-shaped patch on the fore neck, bright yellow; lower part of neck all round dull green; fore part of breast and sides yellowish-red, the rest yellow. Female with the head greenish-brown streaked with black, the upper parts as in the male, the lower yellowish, the breast and sides streaked with brown.

Male, $6\frac{3}{4}$, .., $3\frac{1}{4}$, $\frac{4}{12}$, $\frac{7}{12}$, $\frac{8}{12}$, $\frac{3}{12}$. Female, $6\frac{1}{2}$.

The Cirl Bunting was first described as British by Montagu, and has repeatedly been found in the southern counties of England, where it is permanently resident. It is said to inhabit the southern parts of the European Continent, and not to migrate northward. Its habits are similar to those of the Yellow Bunting, and the male has a shrill piercing song of the same nature. In England, the nest, generally placed in furze, or some other low bush, is composed of dry stalks, roots, and a little moss, and lined with long hair and fibrous roots. The eggs, four or five, are greyish-white, with irregular dusky lines.

Emberiza Cirlus, Linn. Syst. i. 311.—Emberiza Cirlus, Temm. Man. d'Ornith. i. 313.—Emberiza Cirlus, Cirl Bunting, MacGillivray, Brit. Birds, i. 450.

116. Emberiza hortulana. Ortolan Bunting.

Head and neck greenish-grey, spotted with dusky; throat, space around the eye, and a band from the bill downwards, yellow; upper parts reddish-grey, with black spots; lower part of neck, breast, and abdomen brownish-red, the feathers tipped with grey. Female with the band over the eyes and

the throat pale yellow, the breast marked with dark-brown spots, the rest of the lower parts whitish-red.

Male, $6\frac{1}{2}$, 10, $3\frac{7}{12}$, $\frac{5}{12}$, $\frac{9}{12}$, $\frac{7}{12}$, $\frac{3}{12}$.

A few individuals of this species have occurred in England. The first recorded was caught near London; one was taken at sea, off the coast of Yorkshire, in May 1822; a male was killed near Manchester in November 1827, and in the same year another male was caught near London. This species, which is common in the southern countries of Europe, migrates northward as far as the Baltic, although with us it occurs merely as a straggler.

Emberiza Hortulana, Linn. Syst. Nat. i. 309.—Emberiza Hortulana, Temm. Man. d'Ornith. i. 311.—Emberiza Hortulana, Ortolan Bunting, MacGillivray, Brit. Birds, i. 457.

117. Emberiza Schœniclus. Reed Bunting.

Male with the head and throat black; a line from the lower mandible down the neck, a broad band over the back of the neck, and the lower parts white; the back bright chestnut, each feather brownish-black in the middle. Female with the upper parts as in the male, but paler; a band of yellowish-grey across the neck; the head of the same colour as the back; the lower parts greyish-white. Young similar to the adult female, but with duller tints, and the cheeks brownish-grey.

Male, $6\frac{1}{4}$, $9\frac{3}{4}$, $3\frac{2}{12}$, $\frac{4}{12}$, $\frac{9}{12}$, $\frac{6}{12}$, $\frac{3}{12}$. Female, $5\frac{1}{2}$, 9.

This species frequents marshy places, where it is seen perching on willows, reeds, sedges, and other aquatic plants. Its flight is rapid and undulatory, and it alights abruptly, expanding its tail, when the white of that part becomes conspicuous. Its food consists of seeds, insects, and small mollusca. Its song resembles that of the Yellow Bunting, but is less harsh. The nest, which is placed among aquatic plants, is composed of stalks and blades of grasses, bits of rushes and the like, with a neat lining of finer grass and hair. The eggs, four or five, are nine and a half twelfths long, seven and a half twelfths broad, yellowish-grey, with tortuous or angular lines and irregular spots of black.

Black-headed Bunting. Reed Sparrow. Water Sparrow. Ring Bunting. Ring-bird. Ring-fowl. Chink.

Emberiza Schœniclus, Linn. Syst. Nat. i. 311.—Emberiza Schœniculus, Temm. Man. d'Ornith. i. 307.—Emberiza Schœniculus, Reed Bunting, MacGillivray, Brit. Birds, i. 453.

GENUS LIX. PLECTROPHANES. LARK-BUNTING.

Bill short, strong, somewhat pentagonal at the base, conical, somewhat compressed toward the end; upper mandible narrower, with the dorsal line slightly convex, the sides convex, the edges slightly inflected, the tip direct; lower mandible with the dorsal line slightly convex, the back and sides rounded, the edges involute; gape-line ascending obliquely, then direct. Mouth rather narrow; upper mandible internally with a sudden bend about the middle, anterior to which is a narrow knob, with three prominent lines; tongue sagittate and papillate at the base, fleshy, compressed, and terminating in two short, bristly points; œsophagus dilated about the middle; proventriculus oblong; stomach roundish, compressed, with very strong lateral muscles, and dense, rugous epithelium; intestine of moderate length and width; cœca very small. Nostrils oblong. Eyes of moderate size. Head ovate; neck short; body moderate. Legs rather short; tarsus compressed, with seven anterior scutella; toes moderate, the lateral equal, the first large; claws long, slightly arched, compressed, laterally grooved, pointed; that of the hind toe longer than the first joint. Plumage blended; wings long, acute, with eighteen quills, of which the first is longest; tail rather long, emarginate.

The upper mandible is broader than in Emberiza, the knob on the palate less elevated, the wings longer and more pointed, and the hind claw proportionally more elongated. Two species of this genus occur in Britain; both winter visitants, one common, the other rare; but it appears that some individuals of one of them remain to breed in the mountainous districts of Scotland.

118. Plectrophanes nivalis. Snow Lark-Bunting.

Male in winter, with the upper part of the head, cheeks, and a band on the lower neck light reddish-brown; lower parts white; upper black, the feathers edged with yellowish-brown; a patch of white on the wing, including the smaller coverts, and some of the secondary coverts and secondary quills; the

three outer tail-feathers nearly white. Female in winter similar to the male, but darker, and with more reddish-brown on the head and breast, and less white on the wings. Male in summer, with the head, neck, lower parts, and a patch on the wings pure white, the rest black. Female in summer with the same parts white, but the head, cheeks, and a band on the neck tinged with reddish; the black feathers of the upper parts edged with reddish-white. Young male and female in winter, with the head dark reddish-brown, the upper parts yellowish-brown spotted with brownish-black, the lower parts dull white, the fore-neck, breast, and sides tinged with reddish-brown; the male with the small wing-coverts reddish-white, while in the female they are dusky.

Male, $6\frac{7}{12}$, 13, $4\frac{5}{12}$, $\frac{5}{12}$, $\frac{12}{24}$, $\frac{7}{12}$, $\frac{9}{24}$. Female, $6\frac{1}{4}$, $12\frac{1}{4}$.

The Snowflakes arrive in the end of September and beginning of October, and extend from the north of Scotland to the south of England, remaining until the end of Spring, when they return to the Arctic regions. It is probable, however, that some breed in the Grampians, as I have seen in the beginning of August several individuals there, and a family of eight individuals on Loch-na-gar. In winter they frequent the shores of the sea and their vicinity, and in fine weather betake themselves to the interior. They fly somewhat in the manner of Larks, run with great celerity, feed on seeds of various kinds, and insects or pupæ.

Snow Bunting. Snowflake. Snow-fowl. Oat-fowl.

Emberiza nivalis, Linn. Syst. Nat. i. 308.—Emberiza nivalis, Temm. Man. d'Ornith. i. 319.—Plectrophanes nivalis, Snow Lark-Bunting, or Snowflake, MacGillivray, Brit. Birds, i. 460.

119. Plectrophanes lapponica. Lapland Lark-Bunting.

Male in winter with the top of the head black spotted with red, the fore part of the neck greyish-white spotted with black, the wings with two transverse white bands. Female with the top of the head reddish-grey, spotted with black; the throat white; the breast grey, spotted with black. Male in summer with the top of the head, the cheeks, fore neck, and part of the breast pure black, the lower parts white.

Male, $6\frac{9}{12}$, .., $3\frac{10}{12}$, $\frac{6}{12}$, .., $\frac{15}{24}$, $\frac{7}{24}$.

This species, which, like the last, inhabits the northern regions of both continents, migrating in autumn into the temperate parts, is of very rare occurrence in Britain. The first

recorded was obtained in Leadenhall market among larks that had been sent from Cambridgeshire; the second was caught near Brighton; the third was taken near London in 1828; the fourth in 1833, near Preston. In its winter flights it often associates with Larks. According to Dr Richardson it feeds on the seeds of various plants, breeds in marshy places or moist meadows, forms its nest of dry stalks of grass, lining it with hair or feathers, and lays six or seven eggs, of a yellowish colour, spotted with brown.

Lapland Finch.

Fringilla lapponica, Linn. Syst. Nat. i. 317.—Emberiza calcarata, Temm. Man. d'Ornith. i. 322.—Plectrophanes lapponica, Lapland Lark-Bunting, MacGillivray, Brit. Birds, i. 469.

FAMILY XXIV. PASSERINÆ. PASSERINE BIRDS, OR SPARROWS.

The Passerinæ differ little from the Emberizinæ, unless in the form of the bill, and in having the upper mandible broad and concave, in place of being narrow and furnished with a prominent knob. The two families pass insensibly into each other by means of exotic species, although the gradations are not exhibited by the few that occur in Britain. The Passerinæ are all of small size, with the body compact, the neck short, the head large. Bill short, stout, conical, with the sides convex; upper mandible of about the same breadth as the lower, with the dorsal outline straight or convex, the edges overlapping, with a slight sinus near the tip, which is sharp and slightly deflected; lower mandible with the angle short and rounded, the dorsal line straight or slightly convex, the edges inflected, the tip acute. Both mandibles internally concave, the upper generally with three longitudinal elevated lines; tongue sagittate at the base, very narrow, involute, with the tip horny and bifid, or terminated by a pencil of short bristles; œsophagus dilated on the middle of the neck into a crop lying on the left side; proventriculus oblong; stomach roundish, with strong

lateral muscles, radiated tendons, and dense rugous epithelium; intestine of moderate length and width; cœca small, cylindrical, adnate. Eyes of moderate size, eyelids feathered. Nostrils nearly circular, basal, in the fore part of the nasal depression, which is short and broad. Aperture of ear large, elliptical. Legs short; tarsus compressed, with about seven anterior scutella, thin-edged behind, with two longitudinal plates; toes slender, compressed, the second and fourth shortest and equal, first stouter, third and fourth united at the base; claws rather long, slender, arcuate, compressed, laterally grooved, acute. Plumage soft and blended; wings of moderate length, with seventeen quills, the three outer longest; tail moderate, of twelve feathers, of which the lateral are slightly bent outwards.

The Passerinæ, like the Emberizinæ, are for the most part granivorous; but they also eat soft fruits, leaves of plants, and insects. They are active and lively, in winter generally gregarious; have a strong, rapid, and undulated flight; glide among the branches with ease, on the ground always move by short leaps; frequent the open fields in search of food, retreating to trees and bushes when disturbed, and settling there at night. They form an elaborate nest, and lay from four to eight spotted eggs. Of these birds, which for the most part are numerous and generally distributed over the country, we have eighteen species.

GENUS LX. FRINGILLA. FINCH.

Bill shortish, straight, direct, conical, acute; upper mandible with the dorsal line declinate and straight to near the end, when it becomes a little convex, the ridge broad and convex, the sides rounded, the edges inflected but overlapping, with an obsolete notch or sinus close to the tip; lower mandible with the angle short, broad, and rounded, the dorsal line very slightly convex, the ridge broad, the sides

rounded, the edges inflected; gape-line straight. Mouth rather narrow, both mandibles deeply concave; tongue sagittate, subulato-lanceolate, involute so as to be nearly tubular, the tip terminated by a pencil of short bristles; œsophagus dilated into a large crop; proventriculus bulbiform; gizzard roundish, compressed, with very strong lateral muscles and radiated tendons; its cuticular lining dense, and longitudinally rugous; intestine of moderate length, rather wide; cœca very small, cylindrical. Nostrils nearly circular, basal, concealed by the reflected feathers. Eyes of moderate size. Head oblong, moderate; neck short; body compact. Legs short; tarsus compressed, with seven anterior scutella; toes slender, compressed; claws rather long, slender, arcuate, compressed, laterally grooved, acute. Plumage soft and blended; wings broad, with the outer four quills nearly equal, but the second and third longest; tail rather long or moderate, emarginate.

120. Fringilla cœlebs. Chaffinch.

Male with the upper part of the head and the hind neck greyish-blue; a black band on the forehead; the back reddish-brown, the rump yellowish-green; the fore neck and breast purplish-red. Female with the upper part of the head and the back light greyish-brown, the rump yellowish-green, the breast pale yellowish-grey. Young similar to the female, but with the tints paler. Few birds exhibit the effects of the wearing of the feathers in a more remarkable manner than the male Chaffinch, which in the breeding season has the black of the forehead, and the greyish-blue of the head, unmixed, the red of the back brighter, and the breast of a much lighter tint. The bill, which in winter is pale reddish-brown, also becomes of a fine leaden blue.

Male, $6\frac{1}{2}$, $11\frac{1}{2}$, $3\frac{3}{4}$, $\frac{5}{12}$, $\frac{3}{4}$, $\frac{7}{12}$, $\frac{7}{24}$. Female, $6\frac{1}{4}$, 10.

This species is of very common occurrence in all the wooded and cultivated parts of the country. Toward the end of autumn it forms flocks, which betake themselves to the neighbourhood of houses, searching for food by the hedges, in gardens, farm-yards, and fields, and associating with Greenfinches, Yellow Buntings, Sparrows, and Linnets. In winter it feeds chiefly on seeds, but in summer on insects and larvæ. It has a rapid and undulated flight, alights abruptly, walks by short leaps, and is among the most familiar of our birds. Its song

is short, modulated, and mellow, but apt to become tiresome from being incessantly repeated. The nest, which is very neatly constructed of moss, lichens, grass, and other materials, with a lining of wool, hair, and feathers, is usually placed on a tree, or shrub. The eggs, four or five, are oval, nine-twelfths long, six and a half twelfths broad, purplish-white, or pale reddish-grey, sparsely spotted with reddish-brown, and having a few irregular lines of the same. Two broods are reared.

Pink. Spink. Twink. Shilfa. Shelly. Shell-apple. Chaffy. Boldie. Beech Finch. Horse-dung Finch.

Fringilla cœlebs, Linn. Syst. Nat. i. 318.—Fringilla cœlebs, Temm. Man. d'Ornith. i. 357.—Fringilla cœlebs, Chaffinch, MacGillivray, Brit. Birds, i. 329.

121. Fringilla Montifringilla. Mountain Finch, or Brambling.

Male with the head and back deep black, the feathers margined with yellowish-grey; rump white, tinged with yellow; fore neck and breast light reddish-brown, sides spotted with black. Female with the head and back pale greyish-red, the central part of each feather brownish-black; rump greyish-white; breast pale reddish-brown.

Male, $6\frac{1}{4}$, $10\frac{1}{2}$, $3\frac{3}{4}$, $\frac{6}{12}$, $\frac{7}{8}$, $\frac{7}{12}$, $\frac{4}{12}$. Female, 6, 10.

This species, which is very nearly allied to the Chaffinch in its general form and style of colouring, as well as its habits, is very liable to be confounded with that bird, when seen at some distance. It is a winter visitant from the northern regions, and has been met with in most parts of Scotland and England.

Bramble Finch.

Fringilla Montifringilla, Linn. Syst. Nat. i. 318.—Fringilla Montifringilla, Temm. Man. d'Ornith. i. 360.—Fringilla Montifringilla, Mountain Finch or Brambling, MacGillivray, Brit. Birds, i. 335.

GENUS LXI. CARDUELIS. THISTLE-FINCH.

Bill shortish, straight, strong, conical, higher than broad in its whole length, tapering to a very slender point; upper mandible with the dorsal line nearly straight, the ridge narrow, the sides slightly convex, the edges direct, destitute of notch, the tip extended considerably beyond that of the lower mandible, of which the angle is semicircular, the dorsal line

straight, or slightly concave, the ridge narrowed toward the end; gape-line nearly straight. Mouth narrow; both mandibles deeply concave within; tongue sagittate, subulate, involute, the tip terminated by a pencil of short bristles; œsophagus dilated into a crop; proventriculus bulbiform; stomach roundish, compressed, with very strong, lateral muscles, radiated tendons, and dense, longitudinally rugous epithelium; intestine of moderate length, rather wide; cœca very small, cylindrical. Nostrils circular, basal, concealed by the reflected feathers. Eyes moderate. Ear large. Head rather small, oblong; neck short; body rather slender. Legs short; tarsus very short, compressed, with seven scutella; toes slender, compressed; claws long, slender, arched, compressed, laterally grooved, acute. Plumage soft and blended; wing rather broad; the outer three quills nearly equal, but the second longest; tail shortish, emarginate.

The Thistle-finches are distinguished from the Linnets chiefly by having the bill more attenuated toward the end. They usually seek their food on trees or tall herbaceous plants, especially the Compositæ. Two species occur in Britain.

122. Carduelis elegans. Red-fronted Thistle-finch, or Goldfinch.

Bill whitish, with the tip blackish-brown; feathers margining the bill all round, loral space, top of the head, occiput, and semicircular band on the upper part of the hind neck, black; cheeks white; forehead and throat crimson; hind neck and back umber-brown, rump ochre-yellow; wings black, the secondary coverts and basal half of the outer webs of the quills, except the first, pure yellow, the tips white; tail black, tipped with white; lower parts white, the sides brown. Female similar, with the tints less pure. Young with the colours fainter.

Male, 5, 9, $3\frac{2}{12}$, $\frac{11}{24}$, $\frac{7}{12}$, $\frac{6}{12}$, $\frac{4}{12}$. Female, $4\frac{10}{12}$, $8\frac{10}{12}$.

This elegantly formed and beautifully coloured bird is generally distributed in Britain. In autumn it feeds chiefly on the seeds of thistles and other Compositæ; in winter on seeds of various kinds, for which it searches the fields, sometimes in company with Linnets. Its flight is rapid, all its actions lively, its song sweet and varied. It usually nestles on trees, in gardens, or plantations, forming a very neat nest

of moss, lichens, grass, and other materials, with a lining of seed-down or other delicate filaments. The eggs, about five, are nine-twelfths in length, six and a half twelfths in breadth, bluish-white, or pale, greyish-blue, marked with a few spots of greyish-purple and brown.

Goldfinch. Goldspink. Goldie.

Fringilla Carduelis, Linn. Syst. Nat. i. 118.—Fringilla carduelis, Temm. Man. d'Ornith. i. 376.—Carduelis elegans, Red-fronted Thistlefinch, or Goldfinch, MacGillivray, Brit. Birds, i. 393.

123. Carduelis Spinus. Black-Headed Thistlefinch, or Siskin.

Male with the upper part of the head and throat black; back greenish-grey; lower parts yellow; sides white, marked with black streaks; quills and larger coverts black; basal part and outer edges of quills, and tips of secondary coverts yellow; tail yellow, black at the end. Female with the upper parts greenish-grey, streaked with black; lower parts whitish, variegated with narrow black spots.

Male, $4\frac{8}{12}$, 9, $2\frac{9}{12}$, $\frac{5}{12}$, $\frac{7}{12}$, $\frac{6}{12}$, $\frac{3}{12}$. Female, $4\frac{5}{12}$, $3\frac{3}{4}$.

The Siskin appears in autumn and winter in large flocks, feeding on the seeds of thistles and other Compositæ, as well as on those of the birch and alder, which it extracts from the cones. When engaged in this manner, it clings to the twigs in all sorts of attitudes, and is commonly so intent on its occupation as to allow a person to approach unnoticed. It has of late years been found breeding in various parts of Scotland and England; and it is probable that most, if not all, of the individuals seen in this country in the winter months are indigenous.

Aberdevine.

Fringilla Spinus, Linn. Syst. Nat. i. 332.—Fringilla spinus, Temm. Man. d'Ornith. i. 371.—Carduelis Spinus, Black-headed Thistlefinch or Siskin, MacGillivray, Brit. Birds, i. 400.

GENUS LXII. LINOTA. LINNET.

Bill short, straight, conical, nearly as broad as high at the base, compressed toward the end, acute; upper mandible with the dorsal line nearly straight, the ridge broad and rounded, the sides rounded, the edges inflected, with the notch obsolete; lower mandible with the angle semicircular, the dorsal

line straight, the ridge broad and rounded, the sides convex, the edges inflected; gape-line nearly straight. Mouth narrow; both mandibles deeply concave; tongue sagittate, narrow, grooved above, the tip slightly bifid; œsophagus dilated into a crop; proventriculus elliptical; stomach roundish, compressed, with very strong lateral muscles, and radiated tendons, its cuticular lining dense and longitudinally rugous; intestine of moderate length, rather wide; cœca very small, cylindrical. Nostrils circular, basal, concealed by the reflected feathers. Eyes of moderate size. Ears large, elliptical. Head oblong, rather large; neck short; body compact. Legs short; tarsus compressed, with seven scutella; toes slender, compressed, arched, laterally grooved, acute. Plumage soft, blended; wings rather long, broad, with seventeen quills, the outer three longest and about equal; tail rather short, emarginate.

The Linnets are intimately allied to the genera Carduelis, Fringilla, Chlorospiza, and Passer. They are small, lively, and generally prettily, though not gaudily, coloured birds, of which four are found in Britain. I have adopted the generic name *Linota*, proposed by the Prince of Canino, in place of *Linaria*, because the latter is used for a genus of plants.

124. Linota cannabina. Brown Linnet.

Male in winter with the bill dusky above; the throat yellowish-grey, streaked with brown; back and wing-coverts reddish-brown, streaked with darker; forehead and breast with the feathers dark red in their covered parts. Female with the upper parts streaked with dusky brown and greenish-yellow, the lower light yellowish-grey; the throat, breast, and sides streaked with yellowish-brown. Male in summer with the bill greyish-black above; the throat whitish, streaked with brown; back and wing-coverts reddish-brown without streaks; forehead and breast crimson or rose-red, the grey tips of the feathers being worn off. Young similar to the female, streaked above with umber-brown, and greyish-yellow, the lower parts light yellowish, more largely streaked with brown.

Male, $5\frac{3}{4}$, $9\frac{3}{4}$, $3\frac{2}{12}$, $\frac{3}{8}$, $\frac{15}{24}$, $\frac{9}{12}$, $\frac{3}{12}$. Female, $5\frac{1}{4}$, $9\frac{1}{2}$.

The colours of this species are so much brighter in summer, when the tips of the feathers have been abraded, and the tints heightened by the action of the light, that many persons can hardly be persuaded that the Rose Linnet is merely the Brown

Linnet in summer. It is generally distributed, and permanently resident, in winter betakes itself in large flocks to the neighbourhood of towns and farm-steadings, and during severe weather frequents corn-yards, mingling with other species. Its flight is rapid and undulated, its voice soft and mellow, and its song varied and remarkably sweet. In summer it is found dispersed over the hilly and mountainous parts, especially where there are thickets. The nest, which is neatly constructed of grass, moss, and wool, and lined with hair, is placed in a bush or on the ground. The eggs, from four to six, are oval, nine-twelfths long, six and a half twelfths broad, bluish-white, distantly spotted with purplish-grey and reddish-brown. Two broods are commonly reared.

Grey Linnet. Brown Linnet. Rose Linnet. Whin Linnet. Greater Redpoll. Lintie.

Fringilla cannabina, Linn. Syst. Nat. i. 322.—Fringilla cannabina, Temm. Man. d'Ornith. i. 364.—Linaria cannabina, Brown Linnet, MacGillivray, Brit. Birds, i. 371.

125. Linota montium. Mountain Linnet, or Twite.

Male in winter with the bill greyish-yellow; the upper parts light yellowish-brown, streaked with brownish-black; the feathers of the rump red in the middle; lower parts light brownish-yellow, of which colour are two bands across the wing; throat unspotted; feet black. Female in winter with the bill greyish-yellow, tipped with dusky; the colours of the plumage as in the male, but lighter, the rump destitute of red. Male in summer with the bill whitish, the rump rose-red, in other respects as in winter, but paler. Female as in winter. Young with the bill pale greyish-brown; feet light brown; plumage coloured as in the adult female, but with dark brown markings. This species is easily distinguished from the Brown Linnet by its yellowish-red throat, destitute of streaks, and the yellow colour of the bill.

Male, $5\frac{1}{4}$, $3\frac{10}{12}$, $2\frac{11}{12}$, $\frac{9}{24}$, $\frac{8}{12}$, $\frac{6}{12}$, $\frac{3}{12}$. Female, $5\frac{2}{12}$, $8\frac{9}{12}$.

The Mountain Linnet or Twite is very abundant in the northern part of Scotland, the Hebrides, Orkney and Shetland Islands, where it breeds and remains all the year. It becomes less common as we proceed southward. Its habits resemble those of the last species. Its food consists of seeds, and leaves of plants. In winter it forms large bands, and frequents farm-yards; but in summer is dispersed over the heaths and pastures. The nest is placed on the ground among heath or long grass, and is neatly constructed of dry grass, fragments of

heath, and some moss, with a lining of fibrous roots, wool, and hair. The eggs are bluish-white, spotted with brown and purplish-red.

Twite. Heather Lintie.

Fringilla flavirostris, Linn. Fauna Suec. 87.—Fringilla montium, Temm. Man. d'Ornith. i. 368.—Linaria flavirostris, Mountain Linnet, or Twite, MacGillivray, Brit. Birds, i. 379.

126. Linota borealis. Mealy Redpoll Linnet.

Length five inches and a third. Male in winter with the bill dull yellow, greyish-brown toward the end; feet dusky; upper parts light yellowish-brown, streaked with dusky brown, rump greyish-white, streaked with dusky; feathers of the head dusky, tipped with yellowish-grey, some of them dark red in the concealed parts; loral space and throat dull black; lower parts greyish-white, the sides streaked with dusky. Female similar, but with less white. Male in summer with the bill yellow, brown toward the end; forehead crimson; fore part of neck, breast, and rump rose-red; lower parts pure white.

Male, $5\frac{4}{12}$, . . , $2\frac{10}{12}$, $\frac{5}{12}$, $\frac{15}{24}$, $\frac{9}{24}$, $\frac{4}{12}$.

This species, which breeds in the northern parts of both Continents, has been procured in a few instances in England, and once in Scotland.

Fringilla borealis, Temm. Man. d'Ornith. iii. 264.—Linaria borealis, Mealy Redpoll, MacGillivray, Brit. Birds, i. 388.

127. Linota Linaria. Little Redpoll Linnet.

Length nearly five inches. Male in winter with the upper mandible dusky, the lower yellow; feet blackish-brown; throat blackish; back and sides yellowish-brown, streaked with dusky brown; loral space and edge of forehead brownish-black; feathers on the upper part of the head, and rump, dull red. Female similar, but without red on the rump, and having the dark streaks larger. Male in summer with the edge of the forehead, the loral space, and the throat black; upper part of head crimson; sides of neck, breast, and rump, carmine. Female with the fore part of the head crimson, the throat black, the other parts nearly as in winter.

Male, $4\frac{10}{12}$, $8\frac{3}{4}$, $2\frac{9}{12}$, $3\frac{7}{24}$, $1\frac{3}{24}$, $\frac{9}{24}$, $\frac{3}{12}$. Female, $4\frac{9}{12}$.

This species resembles the Siskin in its habits, forming large flocks in winter, and betaking itself to the birch and alder woods, in procuring the seeds of which it hangs in all kinds of attitudes. It also feeds on the seeds of other plants, especially the Compositæ. It is generally dispersed in Bri-

tain, but more common in the southern than in the northern parts. The nest, placed in a bush or low tree, is formed of grass, moss, and downy filaments, and lined with seed-down. The eggs, four or five, are pale bluish-green, spotted with brown.

Lesser Redpoll.

Fringilla Linaria, Linn. Syst. Nat. i. 322.—Fringilla Linaria, Temm. Man. d'Ornith. i. 373.—Linaria minor, Smaller Redpoll Linnet, MacGillivray, Brit. Birds, i. 383.

GENUS LXIII. COCCOTHRAUSTES. GROSBEAK.

Bill of moderate length or rather long, straight, conical, extremely thick, higher than broad at the base, acute; upper mandible with the dorsal line slightly convex, the ridge broad and rounded, the sides rounded, the edges slightly inflected, with a slight notch close to the tip; lower mandible broader at the base, and somewhat larger than the upper, with its crura extremely thick, the angle extremely short, the dorsal line straight, the back very broad, the edges inflected; gape-line a little arched. Mouth rather wide; both mandibles deeply concave; tongue sagittate, narrow, grooved above, the tip bifid; œsophagus wide, dilated on the middle of the neck; proventriculus bulbiform; stomach roundish, compressed, with very strong lateral muscles, and dense, longitudinally rugous epithelium; intestine of moderate length, rather wide; cœca very small, cylindrical. Nostrils small, elliptical, basal, concealed by the reflected feathers. Eyes of moderate size. Ears large, oval. Head large and broad; neck short and thick; body moderate. Legs short; tarsus compressed, with seven anterior scutella; toes slender, compressed; claws rather long, arched, deep, much compressed, laterally grooved, acute. Plumage blended, soft; wing broad, of moderate length, the outer three quills nearly equal, the second longest; tail short, a little emarginate.

This genus is composed of a few species belonging to both continents, remarkable for the extraordinary thickness and strength of their conical bill. This thickness of the bill renders necessary a large size of head, and a thick neck, which give to these birds a clumsy appearance, their body and limbs seeming disproportionately small. Only one species occurs in Britain.

128. Coccothraustes atrogularis. Black-throated Grosbeak.

Male with the head yellowish-brown, the throat and space before the eyes black, the fore part of the back dark chestnut; four of the primary quills emarginate and curved outwards at the extremity. Female with the colours similar, but paler. The bill is pale flesh-coloured in winter, but in spring becomes deep blue, as in the Chaffinch. Young with the throat bright yellow; the head, neck, and upper parts, olive-brown; lower parts paler, each feather tipped with brown.

Male, $7\frac{2}{12}$, $11\frac{1}{2}$, $4\frac{1}{12}$, $\frac{1}{12}$, $\frac{1}{12}$, $\frac{8}{12}$, $\frac{4}{12}$. Female, 7.

Flocks of this species usually visit England, and less frequently Scotland, in the beginning of winter, remaining until the end of spring, and feeding on seeds and kernels. Individuals, however, are permanently resident, the eggs and young having repeatedly been found, especially in the vicinity of Epping Forest. The nest is composed of decayed leaves and lichens, with a lining of fibrous roots and hair. The eggs, from four to six, are pale olive, spotted with black, and streaked with dusky.

Hawfinch.

Loxia Coccothraustes, Linn. Syst. Nat. i. 299.—Fringilla Coccothraustes, Temm. Man. d'Ornith. i. 344. — Coccothraustes atrogularis, Black-throated Grosbeak, or Hawfinch, MacGillivray, Brit. Birds, i. 356.

GENUS LXIV. CHLOROSPIZA. GREENFINCH.

Our Greenfinch is so nearly allied to the Grosbeaks on the one hand, and to the Linnets and Sparrows on the other, that one might expect little censure, either for uniting it with any one of these genera, or for according it generic distinction. Prince Charles L. Bonaparte having preferred the latter method, I see no very urgent reason for not adopting his views.

Bill shortish, straight, conical, subpentagonal at the base, nearly as broad as high, compressed toward the end, acute; upper mandible with the dorsal line slightly curved, the ridge broad and convex, the sides convex, the edges inflected, with scarcely perceptible indications of a notch, close to the acute tip; lower mandible with the angle semicircular, the dorsal

line straight, the back and sides convex, the edges inflected; the gape-line slightly arched. Mouth rather narrow; tongue narrow, pointed, slightly bifid. Digestive organs as in the other genera. Head large; neck short; body moderate. Legs short; tarsus compressed, with seven scutella; toes moderate. Plumage blended; wings of moderate length, the outer three quills almost equal; tail rather short, emarginate.

129. Chlorospiza Chloris. Greenfinch.

Male with the upper parts and breast yellowish-green, the head tinged with grey; the edges of the wing, outer webs of alula, and part of outer webs of primary quills, with the basal part of the tail-feathers, yellow. Female with the upper parts greenish-brown, the breast greyish-brown, the wings and tail marked with yellow as in the male, but to a less extent. Young similar to the female, with faint brown streaks on the back.

Male, $6\frac{1}{4}$, $10\frac{1}{4}$, $3\frac{4}{12}$, $\frac{1}{2}$, $\frac{3}{4}$, $\frac{8}{12}$, $\frac{4}{12}$. Female, 6, 10.

The Greenfinch is generally dispersed, and permanently resident. Its notes scarcely deserve the name of song, and one of them is easily recognised by its peculiar screechy sound. The nest is constructed of fibrous roots, twigs, and straws, lined with fibres, moss, and hair. The eggs, from four to six, are nearly eleven-twelfths long, eight in breadth, bluish-white, spotted with purplish-grey, blackish-brown, and reddish-brown, with some dusky streaks. Two broods are generally reared. In autumn Greenfinches collect into large flocks, which, until spring, search the stubble-fields and corn-yards, often in company with Yellow Buntings and Linnets.

Green Linnet. Green Grosbeak.

Loxia Chloris, Linn. Syst. Nat. i. 304.—Fringilla Chloris, Temm. Man. d'Ornith. i. 346.—Linaria Chloris, Green Linnet, or Greenfinch, MacGillivray, Brit. Birds, i. 365.

GENUS LXV. PASSER. SPARROW.

Bill shortish, straight, conical, subpentagonal and nearly as broad as high at the base; upper mandible with the dorsal line declinate and slightly arched, the ridge narrow but obtuse, the sides much rounded, the edges inflected, but overlapping, with an obsolete notch or slight sinus close to the acute tip; lower mandible somewhat smaller, with the

angle short and rounded, the dorsal line very slightly convex, the ridge broad, the sides much rounded, the edges sharp and inflected. Mouth rather narrow; both mandibles deeply concave; tongue sagittate, fleshy, subulato-lanceolate, involute, grooved above, with the tip slightly bifid; œsophagus enlarged into a crop of considerable size; proventriculus bulbiform; gizzard roundish, compressed, with very strong muscles, and dense, longitudinally rugous epithelium; intestine of moderate length, rather wide; cœca very small; nostrils broadly elliptical, oblique, basal, concealed by the reflected feathers. Eyes of moderate size. Head rather large, oblong; neck short; body compact. Tarsus short, compressed, with seven anterior scutella; toes of moderate length, slender; claws rather long, arched, much compressed, laterally grooved, acute. Plumage blended; wing rather short, with the outer three quills nearly equal, but the third longest; tail rather short, slightly emarginate.

130. Passer domesticus. House Sparrow.

Male with the upper part of the head light brownish-grey; a broad band of chestnut from the eye down the neck, of which the sides are greyish-white; the throat black; the back chestnut mixed with black; a white band across the wing; the lower parts light brownish-grey. Female with the head greyish-brown above, the sides of the neck yellowish-grey, the lower parts light brownish-grey. Young similar to the female.

Male, $6\frac{1}{4}$, $9\frac{1}{2}$, $3\frac{2}{12}$, $\frac{1}{2}$, $\frac{9}{12}$, $\frac{9}{12}$, $\frac{3}{12}$. Female, 6, $9\frac{4}{12}$.

The House Sparrow, the boldest and most familiar of our passerine birds, is generally dispersed in Britain and Ireland, residing in towns, villages, farm-buildings, and seldom betaking itself to places remote from human habitations. In autumn and winter, the Sparrows, usually in large flocks, search the fields for grain and seeds, in the former season often committing considerable havoc among wheat. Stack-yards and dunghills are favourite places of resort at all seasons. The sparrow has a rapid and somewhat undulated flight, advances on the ground by hops, rolls itself in the dust, basks in the sun, loves to lie basking on the sunny side of roofs, or on wall tops, and often perches on trees and bushes. Its food consists of farinaceous substances generally, occasionally insects, sometimes flesh, suet, in short almost any sort of refuse. It nestles in some hole, or cavity, or crack, in a wall

or chimney, or under the eaves, or among the thatch, in short in any convenient locality at a considerable height. The nest is bulky, composed of straw, grass, leaves, twigs, and the like, with a lining of wool, hair, and feathers. The eggs, from four to six, ten or eleven-twelfths long, and about seven-twelfths in breadth, are greyish-white, marked all over with longitudinally oblong spots of pale grey and greyish-black; but the tints and markings differ extremely.

Common Sparrow. Domestic Sparrow.

Fringilla domestica, Linn. Syst. Nat. i. 323.—Fringilla domestica, Temm. Man. d'Ornith. i. 350.—Passer domesticus, House Sparrow, MacGillivray, Brit. Birds, i. 340.

131. Passer montanus. Mountain Sparrow.

Male with the upper part of the head chestnut-red; a band over the eye, the auricular feathers, the space before the eye, and the throat black; the sides of the neck, and a collar on the nape, white; the back chestnut mixed with black; two white bands across the wings; the lower parts whitish. Female with the colours similar, but paler.

Male, $5\frac{8}{12}$, .., 3, $\frac{9}{24}$, $\frac{8}{12}$, $\frac{7}{12}$, $\frac{3}{12}$. Female, $5\frac{1}{2}$.

Although common on the Continent, this species is rare in Britain, where it is met with only in some parts of England. Although in its mode of flight and general habits it resembles the common species, it differs in several respects, and especially in nestling, not in houses, but in holes in decayed trees.

Tree Sparrow.

Fringilla montana, Linn. Syst. Nat. i. 234.—Fringilla montana, Temm. Man. d'Ornith. i. 354.—Passer montanus, Tree Sparrow, MacGillivray, Brit. Birds, i. 351.

GENUS LXVI. CORYTHUS. PINEFINCH.

Bill short, stout, bulging at the base, conical, acute; upper mandible with the dorsal line very convex, the sides rounded, the edges gently ascending at the base, then arched, slightly festooned, with very slight notches, the tip declinate and sharp; lower mandible with the angle short and wide, the dorsal line slightly convex, the back broad, the sides convex, the edges somewhat inflected, the tip narrow, but rather obtuse. Mouth of moderate width; tongue short, much compressed, concave above toward the end, which is obtuse; œsophagus dilated into a large crop; proventriculus oblong;

stomach a strong gizzard; intestine of moderate length and width; cœca very small. Nostrils round, concealed by reversed feathers. Eyes rather small. Head large, roundish-ovate; neck short; body moderately stout. Tarsus short, compressed, with seven scutella; toes stout; claws long, moderately arched, compressed, acute. Plumage soft and full; wings of moderate length, the outer three quills nearly equal; tail rather long, deeply emarginate.

This genus is closely allied to Pyrrhula, and perhaps still more intimately to Loxia, although the bill has a very different aspect.

132. Corythus Enucleator. Red Pinefinch.

Male with the head, neck, and fore part of the breast and rump bright red, or carmine tinged with vermilion, the back greyish-brown, the feathers edged with red; the wings dusky, with two white bars; the lower parts light grey. Female with the head yellowish-brown, the rump brownish-yellow, the rest of the plumage grey, the wings as in the male. Young like the female.

Male, $8\frac{1}{2}$, . . , $4\frac{3}{4}$, $1\frac{5}{4}$, $\frac{9}{12}$, $\frac{8}{12}$, $\frac{4}{12}$. Female, $8\frac{1}{4}$.

The habits of this species are similar to those of the Crossbills. It occurs in the northern parts of both Continents, and feeds on the seeds of pines, and various other plants. Pennant mentions having met with it early in August in the pine forest of Invercauld in Aberdeenshire.

Pine Bullfinch. Pine Grosbeak.

Loxia Enucleator, Linn. Syst. Nat. i. 299.—Pyrrhula Enucleator, Temm. Man. d'Ornith. i. 333.—Pyrrhula Enucleator, Pine Bullfinch, MacGillivray, Brit. Birds, i. 411.

GENUS LXVII. LOXIA. CROSSBILL.

Bill of moderate length, very strong, subpentagonal and rather higher than broad at the base, tapering, compressed toward the end, with the tip laterally deflected and curved in opposite directions; upper mandible larger, with its dorsal line convex, the ridge rather narrow, the tip decurved, compressed, worn beneath to a thin edge, and slightly bent to one side; lower mandible with the angle very short and broad, the dorsal line convex, the tip compressed, acute, and deflected. Mouth rather narrow; tongue slender, emarginate

and papillate at the base, compressed in the middle, horny and concave above toward the end; œsophagus rather wide, and having a large crop; proventriculus oblong; stomach rather small, roundish, with strong muscles, and dense rugous epithelium; intestine shortish, rather wide, with very small cœca. Nostrils basal, circular, concealed by the reversed feathers. Eyes rather small. Aperture of ear large. Head large, roundish; neck short; body compact. Legs short and strong; tarsus compressed, with six anterior scutella; toes of moderate strength; claws large, arched, compressed, laterally grooved, very acute. Plumage rather blended; wings long, with the outer three quills nearly equal; tail short, emarginate.

The Crossbills are especially remarkable for the manner in which the tips of their mandibles become bent and elongated, so as to cross each other in a considerable degree. In the young birds, previous to their leaving the nest, the bill is of the usual form; so that the characteristic peculiarity of the genus results from the habit of applying the bill with a lateral twist, in order to disengage the seeds of the cones of firs and pines. They are inhabitants of the colder regions, and migrate in large flocks. One species is not very uncommon in Britain, where some pairs have also been known to breed.

133. Loxia Pytiopsittacus. Parrot Crossbill.

Length about eight inches, wing from flexure four and a third, bill seven-twelfths in height at the base, of about the same length as the tarsus, extremely bulging, its outlines very convex, the points short, that of the lower slightly ascending. Male dull red above, brighter beneath, the rump yellowish-red, the wings and tail dark olive-brown. Female greyish-brown tinged with yellow above, the rump yellow, light yellowish-grey beneath, the wings and tail as in the male. Young males brownish-red, or yellowish-red, or wax yellow, or mottled with yellow and red.

Male, 8, .., $4\frac{1}{4}$, 1, $\frac{9}{12}$, $\frac{8}{12}$, $\frac{5}{12}$.

A specimen supposed to be British is in the museum of the University of Edinburgh, and another has been described by Mr Selby. It is not very certain that this species is not constituted merely of very large individuals of the next.

Loxia Pytiopsittacus, Temm. Man. d'Ornith. i. 324.—Loxia Pytiopsittacus, Parrot Crossbill, MacGillivray, Brit. Birds, i. 429.

134. Loxia europæa. European Crossbill.

Length about seven inches, wing from flexure four, bill from four and a half to six and a half twelfths in height at the base, longer than the tarsus, much curved, the point of the lower mandible seldom reaching so high as the level of the ridge of the upper. Male dull red above, brighter beneath, the rump yellowish-red, the wings and tail dark olive-brown. Female greyish-brown tinged with yellow above, the rump yellow, light yellowish-grey beneath, the wings and tail as in the male. Young light brownish-grey, streaked with dusky, the rump tinged with yellow; the lower parts white, streaked with greyish-brown. Young males brownish-red, or yellowish-red, or wax-yellow, or mottled with yellow and red.

Male, $7\frac{1}{2}$, $11\frac{9}{12}$, $4\frac{9}{12}$, $\frac{8}{12}$, $\frac{7}{12}$, $\frac{4}{12}$. Female, $7\frac{1}{4}$, $11\frac{7}{12}$.

Crossbills make their appearance at irregular periods, in different parts of the country, generally confining themselves to plantations and woods of fir and pine, in which they find their favourite food, consisting of the seeds of these trees, which they extract from between the scales of the cones. They cling to the twigs and cones, keep up a low shrill chatter while feeding, and are generally regardless of danger. They nestle at all seasons; at least, nests have been found in winter, in spring, and in summer.

Crossbill. Sheld-apple.

Loxia curvirostra, Linn. Syst. Nat. i. 299.—Loxia curvirostra, Temm. Man. d'Ornith. i. 328.—Loxia europæa, Common European Crossbill, MacGillivray, Brit. Birds, i. 417.

135. Loxia leucoptera. White-winged Crossbill.

Length about six and a half inches; mandibles extremely compressed toward the end; wings black, with two transverse white bands. Male bright crimson above and beneath. Female dusky, tinged with yellow above, the rump wax-yellow, the lower parts yellowish-grey, longitudinally streaked with dusky. Young like the female, but with less yellow.

Male, $6\frac{4}{12}$, $10\frac{1}{2}$, $3\frac{1}{2}$, $\frac{8}{12}$, $\frac{1}{2}\frac{5}{4}$, $\frac{5}{12}$, $\frac{5}{12}$. Female, $6\frac{3}{12}$, 10.

This species, which occurs abundantly in the northern regions of America, is occasionally met with on the European Continent. A specimen was obtained near Belfast in 1802, and another near Worcester in 1836.

Loxia leucoptera, Gmel. Syst. Nat. i. 844.—Loxia leucoptera, Temm. Man. d'Ornith. iii. 243.—Loxia leucoptera, White-winged Crossbill, MacGillivray, Brit. Birds, iii. 689.

GENUS LXVIII. PYRRHULA. BULLFINCH.

Bill very short, strong, bulging, subpentagonal, and about as high as broad at the base; upper mandible with its dorsal line convex, the sides much rounded, the edges sharp, without notch, but forming a wide sinus or curve toward the tip, which is decurved, and contracts to a narrow, rather blunt point, extending considerably beyond the lower; lower mandible with the angle very short, the dorsal line convex, the sides much rounded, the edges involute, with a thin angular prominence near the middle, the tip slightly compressed. Mouth of moderate width; tongue very short, oblong, concave above; œsophagus dilated into a crop; proventriculus oblong; stomach a strong gizzard; intestine of moderate length and width; cœca very small. Nostrils small, round, basal, concealed. Eyes rather small. Ear large. Head rather large; neck short; body moderate. Tarsus very short, compressed, with seven scutella; toes slender and short, the lateral about equal; claws rather long, arched, much compressed, laterally grooved, acute. Plumage soft and blended; wings of moderate length, the second, third, and fourth quills longest; tail rather long, emarginate.

136. Pyrrhula pileata. Hooded Bullfinch.

Male with the upper part of the head, a band round the base of the lower mandible, the wings, upper tail-coverts, and tail bluish-black; the back ash-grey, the rump white, the lower parts bright red. Female with the same parts black, the back brownish-grey, the lower parts dull yellowish-brown. Young with the upper parts greyish-brown, the lower yellowish-brown.

Male, 6, $9\frac{1}{12}$, $3\frac{4}{12}$, $\frac{4}{12}$, $\frac{8}{12}$, $\frac{6}{12}$, $\frac{3}{12}$. Female, $5\frac{1}{12}$, $9\frac{1}{12}$.

Generally distributed in Britain, occurring in most of the wooded and cultivated districts, although not very common any where. Its flight is quick and undulated, its ordinary note a soft plaintive whistle, its song short and mellow, its food seeds of various kinds. Its nest is placed on a bush or tree,

and is composed of twigs, moss, and slender roots. The eggs, four or five, are nine and a half twelfths long, seven and a half twelfths in breadth, bluish-white, spotted and streaked with purplish-grey and reddish-brown.

Coal-hood. Red-hoop. Tony-hoop. Alp. Pope. Nope.

Loxia Pyrrhula, Linn. Syst. Nat. i. 338.—Pyrrhula vulgaris, Temm. Man. d'Ornith. i. 338.—Pyrrhula pileata, Common Bullfinch, MacGillivray, Brit. Birds, i. 407.

GENUS LXIX. CALAMOPHILUS. PINNOCK.

Bill short, rather slender; upper mandible with the dorsal line considerably convex, the sides also convex, the edges thin, toward the end arched, without notch, the tip narrow and declinate; lower mandible with the angle rather narrow, the dorsal line almost straight, the edges inflected, the tip narrow. Tongue slender, trigonal, obliquely truncate and lacerate; œsophagus enlarged into a crop; stomach muscular, with dense rugous epithelium; intestine of moderate length; cœca very small. Nostrils small, round, concealed. Eyes of moderate size. Ear roundish, rather large. Head ovate, moderate; neck short; body rather slender. Feet of moderate length; toes moderate; claws rather long, arched, compressed, acute. Plumage very soft, blended; wings short, rounded; first quill extremely small; second a little shorter than third and fourth; tail very long, graduate, of twelve weak rounded feathers.

137. Calamophilus biarmicus. Bearded Pinnock.

Male with the head light greyish-blue, the general colour light red; the wings variegated with black and white; mystachial bands of elongated lanceolate feathers, and lower tail-coverts, black. Female lighter, with the head merely tinged with grey, no mystachial bands, and the lower tail-coverts light red. Young like the female, but with the head and back black.

Male, $6\frac{1}{2}$, $7\frac{1}{4}$, $2\frac{1}{2}$, $\frac{9}{12}$, $\frac{9}{12}$, $\frac{6}{12}$, $\frac{5}{12}$. Female, $6\frac{1}{4}$.

This beautiful bird, which has by authors usually been referred to the genus Parus, but which I think, judging from its digestive organs, must belong to the Huskers, is said to be extensively dispersed over the Continent, inhabiting the marshy borders of rivers and lakes. In England it is found chiefly

along the Thames, and in the counties of Cambridge, Norfolk, Suffolk, and Lincoln. Residing among the reeds and other aquatic plants, it clings to their stems in the manner of Tits, Siskins, or Redpolls. Its food consists of seeds and small testaceous mollusca. The nest, generally placed in a tuft of grass or rushes on the ground, is composed of leaves of grass and sedge, and lined with panicles of seeds. The eggs, five or six, are eight and a half twelfths long, white, with a few light red lines and dots.

Bearded Titmouse. Least Butcher-bird.

Parus biarmicus, Linn. Syst. Nat. i. 342.—Parus biarmicus, Temm. Man. d'Ornith. i. 298.—Calamophilus biarmicus, Bearded Pinnock, MacGillivray, Brit. Birds, iii. 694.

While some birds, as the Vagatrices, are well adapted for walking on the ground, and others, as the Cantatrices and Deglubitrices, are fitted for hopping from twig to twig, or for advancing on the ground by short leaps; there are others more peculiarly fitted for climbing in various ways. Thus, the Parrots ascend by grasping the twigs with their feet and bill; the Woodpeckers and Creepers by hooking themselves against the bark, and supporting themselves by pressing their tail against the surface. Of these climbing birds some have the three fore toes more or less united at the base and spreading little, while others have the outer toe directed outwards or backwards. Hence two groups, designated by the names of Creepers and Climbers.

ORDER IX. REPTATRICES. CREEPERS.

Birds of small size, having a slender body, short or moderate neck, small oblong head. Bill more or less elongated, slender, compressed, acute. Mouth narrow; tongue slender, varying in length; œsophagus of moderate width, without dilatation; stomach of moderate size, oblong or elliptical, with the lateral muscles rather thick, the epi-

thelium dense and longitudinally rugous; intestine rather short; cœca very small, or obsolete. Tarsi short, slender; toes long, slender, four; the anterior parallel, and more or less united, the hind toe very stout; claws large, arched, extremely compressed, very acute. Plumage soft, more or less blended; wings short, concave, rounded; tail of ten or twelve feathers.

Several natural groups enter into this order, namely, the MELLIPHAGINÆ, CERTHIINÆ, DENDROCOLAPTINÆ, and SITTINÆ. Of these, however, we have representatives of only the second and last.

FAMILY XXV. CERTHIINÆ. CERTHINE BIRDS, OR TREE-CREEPERS.

The Certhiinæ, which are closely allied to the Sylviinæ, are all of small size, with the body slender, the neck generally short, the head rather large and ovate. Bill of moderate length or elongated, slender, arched, with the notches obsolete, the tip acute. Both mandibles internally very narrow and concave; tongue very slender, emarginate and papillate at the base, channelled above, tapering, with the point thin-edged, bristly, rather obtuse; œsophagus of moderate and nearly uniform width; proventriculus oblong; stomach elliptical, moderately muscular, with dense, longitudinally rugous epithelium; intestine short and wide; cœca very small. Trachea with four pairs of inferior laryngeal muscles. Nostrils linear or oblong, exposed. Eyes of moderate size. Aperture of ear large, roundish. Tarsi short, slender; anterior toes united at the base, extremely compressed, the outer longer than the inner, the hind toe very long; claws long, arched, extremely compressed, acute. Plumage soft, blended; no bristles; wings rather short, broad, concave, much

rounded, the first quill short; tail of moderate length, rounded.

GENUS LXX. CERTHIA. TREE-CREEPER.

Bill rather long, very slender, subtrigonal, tapering, arcuate, much compressed, acute; upper mandible with its dorsal line arcuate, the ridge very narrow, the edges sharp, without notch; lower mandible with the angle very narrow, the dorsal line decurved; gape-line arcuate. Tongue long, narrow, sagittate, tapering, lacerate, acute; œsophagus of moderate width; stomach elliptical, muscular; intestine very short; cœca very small. Nostrils linear-oblong, exposed. Eyes of moderate size. Head ovato-oblong; neck short; body small. Tarsus slender, compressed, with seven scutella, the upper indistinct; toes rather large, extremely compressed; hind toe very large, second much shorter than fourth, anterior united at the base; claws very long, arched, extremely compressed, laterally grooved, very acute. Plumage very soft, blended; wings rather long, convex, much rounded, of nineteen quills, the first short, the fourth and fifth longest; tail long, of twelve slightly arched, stiffish, pointed feathers.

138. Certhia familiaris. Brown Tree-creeper.

Upper part of the head dark brown, neck and back yellowish-brown, each feather with a median whitish streak; rump yellowish-red; wings with a transverse whitish band; lower parts silvery white. Young similar, but with the feathers more loose, and the tints duller.

Male, $5\frac{5}{12}$, 8, $2\frac{7}{12}$, $\frac{7}{12}$, $\frac{7}{12}$, $\frac{7}{12}$, $\frac{11}{24}$, $\frac{4}{12}$. Female, $5\frac{2}{12}$, $7\frac{1}{2}$.

The Brown Tree-creeper is permanently resident in all the wooded parts of the country, but nowhere numerous. It alights at the bottom of a tree, clinging to the bark with its claws, ascends by short starts, leaping forward as it were, and supporting itself by pressing its tail against the bark. Its food consists of insects, larvæ, and pupæ, which it finds in the crevices. On ordinary occasions it pays little attention to a person intruding upon its haunts, and may thus be easily shot. Its nest is placed in some hole in a tree, or rock, or among the roots in a mossy bank, and is composed of grass, moss,

fibrous roots, and other materials, with a lining of feathers. The eggs, from five to eight, are seven and a half twelfths long, five-twelfths in breadth, glossy, white, dotted with brownish-red or light red, the dots often disposed in a broad belt near the larger end.

Creeper. Tree-speeler. Brown Woodpecker.

Certhia familiaris, Linn. Syst. Nat. i. 184.—Certhia familiaris, Temm. Man. d'Ornith. i. 410.—Certhia familiaris, Brown Tree-creeper, MacGillivray, Brit. Birds, iii. 33.

GENUS LXXI. UPUPA. HOOPOE.

Bill longer than the head, very slender, slightly arched, angular, pentagonal at the base, four-sided toward the end, tapering, acute; upper mandible with the ridge very narrow, the sides flattened, the edges sharp, without notch; lower mandible with the angle rather long, the ridge sharp, the tip acute; gape-line slightly arcuate. Mouth of moderate width; tongue very short, fleshy, flattened. Nostrils oblong, basal. Eyes moderate. Head ovato-oblong; neck moderate; body rather slender. Feet very short; tarsus roundish, with seven anterior scutella; toes moderate, compressed; the first large, the third and fourth connate at the base; claws of moderate length, stout, compressed, acute, well-arched, excepting that of the hind toe. Plumage soft, blended; feathers on the top of the head elongated, forming a large crest; wing rather long, very broad, much rounded, of nineteen quills, the fourth longest; tail nearly even, of ten soft feathers.

139. Upupa Epops. European Hoopoe.

Head and neck light red, crest-feathers tipped with black; fore part of back light purplish-red, middle part barred with black and reddish-white, tail-coverts black, barred with white; wings and tail black, the former with several, the latter with a single band of white.

Male, 12, . . , $5\frac{5}{12}$, $2\frac{1}{4}$, $\frac{10}{12}$, $\frac{8}{12}$, $\frac{9}{24}$.

The Hoopoe is merely an occasional or accidental visiter, but has been met with in most parts of the country. Its habits are not known with certainty; but the form of its tarsi and claws would lead us to suppose that it creeps upon trees. It is said to nestle in holes, and to lay from two to five light grey or bluish-white eggs.

Upupa Epops, Linn. Syst. Nat. i. 183.—Upupa Epops, Temm. Man. d'Ornith. i. 415.—Upupa Epops, European Hoopoe, MacGillivray, Brit. Birds, iii. 41.

FAMILY XXVI. SITTINÆ. SITTINE BIRDS, OR NUTHATCHES.

Birds of small size, having the body short and compact, the neck short, the head rather large. Bill of moderate length, straight, slender, pentagonal at the base, four-sided toward the end, with the tip acute or somewhat cuneate. Mouth narrow; tongue slender, very thin, with the point abrupt, and furnished with several bristles; œsophagus rather wide, tapering, without crop; proventriculus oblong; stomach rather large, roundish, muscular, with dense, rugous epithelium; intestine rather short and wide; cœca very small. Plumage very soft, full, blended; wings long, very broad, with the third and fourth quills longest; tail short, of twelve soft feathers. Tarsi short or moderate, slender; toes long, slender, compressed, the anterior coherent at the base, the hind toe elongated; claws long, well-arched, compressed, acute.

In the form of the feet and claws the Sittinæ resemble the Certhiinæ, while in the structure of the bill they are somewhat allied to the Woodpeckers, and in their general aspect and habits approach the Parinæ.

GENUS LXXII. SITTA. NUTHATCH.

Bill of moderate length, straight, slender, but strong, somewhat conical, slightly higher than broad, pentagonal at the base, four-sided toward the end, with the point sharp, or somewhat wedge-shaped from use; upper mandible with the dorsal line almost straight, the ridge rather obtuse, the edges without notch; lower mandible with the angle rather short, the tip acute; gape-line straight. Mouth narrow; tongue slender, abrupt, bristle-tipped. Nostrils oblong, basal. Head

ovate, rather large; neck short; body very short. Tarsus very short, compressed, with seven very broad anterior scutella; toes large, much compressed, the first long, the three anterior united at the base as far as the second joint; claws long, much arched, extremely compressed, laterally grooved, very acute. Plumage soft and blended; wings long, very broad, rounded, the first quill very small, the fourth longest; tail short, even, of twelve rounded feathers.

140. Sitta europæa. European Nuthatch.

Upper parts bluish-grey; throat and cheeks white; loral space and a band behind the eye black; lower parts light reddish-yellow, sides brownish-red. Young similar, but with the plumage more loose and the colours paler.

Male, $5\frac{8}{12}$, $10\frac{1}{4}$, $3\frac{4}{12}$, $\frac{9}{12}$, $\frac{9}{12}$, $\frac{15}{24}$, $\frac{9}{24}$.

The Nuthatch is not generally distributed in Britain, being of rare occurrence in the northern parts of England, and not hitherto observed in Scotland. Like the Creeper and Woodpeckers, it ascends the trunks and branches of trees, by means of its long-curved claws, but without employing its tail as a support, and it descends in the same manner, head-foremost, in which respect it differs from all our other birds. Besides insects, it feeds on the kernels of nuts, which it perforates with its strong pointed bill. All its actions are abrupt and lively, like those of the Tits. It nestles in a hole of a tree, laying six or seven eggs, which are white, spotted with light red.

Sitta europæa, Linn. Syst. Nat. i. 177.—Sitta europæa, Temm. Man. d'Ornith. i. 407.—Sitta europæa, European Nuthatch, MacGillivray, Brit. Birds, iii. 48.

ORDER X. SCANDRICES. CLIMBERS.

Birds of small or moderate size, having the body compact, the neck of moderate length, the head rather large. Bill straight, or slightly curved, usually about the length of the head, strong, tapering, compressed toward the end. Tongue long, slender, flattened and fringed, or cylindrical,

fleshy, with a horny barbed tip and extensile by means of the elongated hyoid bones; œsophagus without crop; proventriculus extremely large; stomach moderately muscular, with a dense longitudinally rugous epithelium; intestine of moderate length, rather wide; no cœca. Tarsi short, compressed, anteriorly scutellate; toes compressed, moderate, excepting the first, which is short, sometimes rudimentary or wanting, the fourth or outer long and directed backwards; claws strong, much arched, compressed, laterally grooved, very acute.

Of this order we have in Britain only a few representatives of a single family, the Picinæ. They cling to the bark of trees by means of their strong curved claws, ascend vertically or obliquely, tap the loose bark of decayed trees, or detach it in fragments, or break up the rotten wood, to obtain the larvæ and insects which shelter there. They nestle in holes which they bore in decayed trees.

FAMILY XXVII. PICINÆ. PICINE BIRDS, OR WOODPECKERS.

Bill strong, straight, tapering, angular, wedge-shaped, or compressed and abrupt at the end. Tongue long, slender, round, with a flattened narrow tip furnished with lateral reversed prickles, and capable of being thrust out to a great extent, by means of the elongated hyoid bones, which curve round the skull as far as the forehead, and sometimes even surround the right eye; œsophagus of moderate width, or rather narrow; proventriculus very wide; stomach moderate, roundish, with moderately strong muscles, and dense, rugous epithelium; intestine of moderate length, rather wide; no cœca; cloaca enormously large. Tarsi short; toes long, the outer elongated and directed outwards and backwards, the first small,

sometimes wanting; claws large, well arched, compressed, laterally grooved, very acute. Wings large, rounded; tail cuneate, of twelve feathers, the lateral very small, the rest with very strong shafts, and stiff deflected filaments.

The genera differ little from each other, either in form or in habits. All the species live chiefly on larvæ and insects which they obtain by digging into the bark and wood of decayed trees. They also eat ants, berries, and various soft fruits.

GENUS LXXIII. PICUS. WOODPECKER.

Bill rather long, stout, conical, pentagonal, straight, laterally bevelled at the tip so as to present an edged, abrupt, wedge-like termination; upper mandible with the dorsal line declinate and straight, the ridge sharp, the sides with a longitudinal elevated line remote from the ridge; the tip truncate; lower mandible with the ridge sharp and almost straight, the tip truncate. Mouth of moderate width; tongue vermiform, terminated by a narrow, flat, horny point, which is ciliated with short reversed bristles; œsophagus of moderate width; proventriculus very wide; stomach roundish, a little compressed, its muscular coat rather thin, its epithelium dense; intestine of moderate length, rather wide; no cœca. Nostrils elliptical or oblong, concealed by reversed bristly feathers. Eyes of moderate size. Head oblong; neck of ordinary length; body rather slender. Feet very short; first toe very short; second of moderate length, and united at the base to the third; fourth long, and directed backwards; claws very large, curved, acute. Wings large, with nineteen quills, the first very small, the fourth and fifth longest; tail rounded or wedge-shaped, with the shafts very strong, the terminal filaments stiff and deflected.

141. Picus martius. Great Black Woodpecker.

Plumage brownish-black; the male with the upper part of the head, the female with only the occiput, crimson.

Male, 19, .., $9\frac{1}{2}$, $2\frac{4}{12}$, $1\frac{5}{12}$, $\frac{10}{12}$, 1. Female, $18\frac{1}{4}$.

This species has been met with in England only in a few

instances. Two specimens in my collection, were shot near Nottingham.

Picus martius, Linn. Syst. Nat. i. 173.—Picus martius, Temm. Man. d'Ornith. i. 390.—Picus martius, Great Black Woodpecker, MacGillivray, Brit. Birds, iii. 77.

142. Picus Pipra. Pied Woodpecker.

Male with the upper part of the head, the back, and a band on the side of the neck, bluish-black; a patch of crimson on the hind head; a broad band of white over the forehead and under the eye, a patch on the side of the neck, a narrow line over the eye, and the scapulars, white; the lower parts brownish-white, excepting the abdomen and lower tail-coverts, which are crimson. Female similar, but with the occiput black, the white parts tinged with yellow, and the lower pale brown. Young with the black parts tinged with brown, and the top of the head crimson.

Male, $9\frac{3}{4}$, 17, $5\frac{1}{2}$, $1\frac{2}{12}$, 1, $\frac{8}{12}$, $\frac{7}{12}$. Female, $9\frac{1}{2}$, $16\frac{1}{2}$.

The Pied, or Greater Spotted Woodpecker, is extensively distributed in England and Scotland, as well as in Ireland. It is permanently resident, frequents woods and plantations, especially those of beech and pine, feeding on insects and larvæ, which it obtains in the decayed bark and wood. The eggs are placed in a hole formed in a tree, without any other nest than chips of wood. They are generally five, pure white, glossy, elliptical, one inch and a twelfth in length, and nine-twelfths in breadth.

Greater Spotted Woodpecker. Whitwall. Wood-pie. French Pie.

Picus major, Linn. Syst. Nat. i. 176.—Picus major, Temm. Man. d'Ornith. i. 395.—Picus Pipra, Pied Woodpecker, MacGillivray, Brit. Birds, iii. 80.

143. Picus striolatus. Striated Woodpecker.

Male with the forehead white, the crown crimson, margined with black, the back and scapulars transversely barred with black and white; sides of the head and neck white, with a black band; lower parts brownish-white, breast and sides with longitudinal dusky lines. Female similar, but with the crown white.

Male, $5\frac{1}{2}$, 10, $3\frac{1}{2}$, $\frac{7}{12}$, $\frac{7}{12}$, $\frac{5}{12}$, $\frac{5}{12}$.

This species occurs in most of the southern, eastern, and midland counties of England, extending as far north as Derby, and westward to Shrewsbury and Hereford. Its habits are

similar to those of the last species. It usually prefers the higher branches of trees, although it by no means confines itself to them, and is so intent on searching for its food that it pays little attention to a person coming to watch or shoot it. It produces an extraordinarily loud, rapid, vibratory noise, somewhat resembling that made by the boring of a large auger in hard wood, but its ordinary voice is a feeble squeak, several times repeated. The eggs, five in number, and white, are laid in the bottom of a hole formed in decayed wood.

Lesser Spotted Woodpecker. Hickwall. Crank-bird. Pump-borer.

Picus minor, Linn. Syst. Nat. i. 176.—Picus minor, Temm. Man. d'Ornith. i. 399.—Picus striolatus, Striated Woodpecker, MacGillivray, Brit. Birds, iii. 86.

GENUS LXXIV. GECINUS. GREEN-WOODPECKER.

The common Green-Woodpecker and a few nearly allied species may be separated from the rest to constitute a genus, to which Boie has given the name of Gecinus. This genus makes some approximation to Colaptes, or that of the Golden-winged Woodpeckers of America, and is remarkable especially for having the two glosso-laryngeal muscles twisted round the trachea, which I have not found to be the case in any of the other fifteen or twenty species which I have dissected, with the exception of Colaptes auratus.

Bill rather long, somewhat slender, angular, straight, tapering, laterally bevelled at the tip, so as to present an edged, abrupt, wedgelike termination; upper mandible with the dorsal line slightly convex, the ridge sharp, the sides with a longitudinal elevated line close upon the ridge, the tip slender, and slightly truncate. Mouth narrow; tongue vermiform, terminated by a narrow, flat, horny point, fringed with reversed bristles; the other characters, as in Picus.

144. Gecinus viridis. Crimson-headed Green-Woodpecker.

Male with the upper parts yellowish-green, the rump greenish-yellow; the upper part of the head and hind neck crimson, the loral and orbital spaces, and a mystachial band, black, the latter with a crimson patch; the lower parts pale greenish-

yellow, tinged with grey, faintly barred behind with dusky. Female similar, but without red on the cheek. Young greyish-green above, the upper part of the head grey, spotted with crimson, the lower parts greenish-white, transversely barred with dusky.

Male, $13\frac{1}{2}$, 21, $6\frac{1}{2}$, $1\frac{9}{12}$, $1\frac{2}{12}$, 1, $\frac{10}{12}$. Female, 13, 21.

The Green Woodpecker does not occur in any part of Scotland, but is common, and permanently resident in most of the wooded districts of England. Besides searching trees for larvæ and insects, it often betakes itself to the ground to seek for insects, and particularly ants, and their eggs. In the breeding season it emits a noise resembling a shout of laughter, as well as a remarkable sound supposed to be produced by tapping with its bill on some decayed and sonorous branch. The eggs, five in number, and pure white, are laid in a hole dug for the purpose in decayed wood.

Hewhole. Woodwall. Woodspite. Yaffler. Yappingale. Popinjay. Rainbird.

Picus viridis, Linn. Syst. Nat. i. 175.—Picus viridis, Temm. Man. d'Ornith. i. 391.—Picus viridis, Green Woodpecker, MacGillivray, Brit. Birds, iii. 91.

GENUS LXXV. YUNX. WRYNECK.

Bill rather short, slender, straight, tapering, acute; upper mandible with the dorsal line almost straight, the ridge convex toward the end, the sides sloping, the edges sharp, without notch or sinus, the tip acute; lower mandible with the angle long, the dorsal line straight, the tip acute; gape-line straight. Mouth rather narrow; tongue extremely extensile, vermiform, with its terminal part horny, flat tapering, without bristles. Nostrils linear, nasal membrane large, and anteriorly bare. Eyes of moderate size. Head oblong, flattened in front; neck short; body rather slender. Feet short, rather slender; tarsus feathered anteriorly a little below the joint, compressed, with seven anterior and as many smaller posterior scutella; toes two before, parallel, united at the base; two behind, the first very small, the fourth almost as long as the third; claws moderate, arched, extremely compressed, laterally grooved, acute. Plumage very soft; wings moderately long, straight, rather acute, of twenty feathers; first quill extremely small, third longest; tail rather long,

rounded, of ten broad, rounded feathers, of ordinary structure.

This genus is connected with the Picinæ by the form of the bill, and the extensile tongue, which, however, is not barbed.

145. Yunx Torquilla. Wryneck.

Plumage of the upper parts brownish-grey, spotted, undulated, and dotted with blackish-brown; a longitudinal band of dark brown on the hind neck; the fore neck and sides greyish-yellow, with transverse narrow bars of brownish-black.

Male, 7, 11, $3\frac{7}{12}$, $\frac{6}{12}$, $\frac{9}{12}$, $\frac{8}{12}$, $\frac{4}{12}$.

The Wryneck, which is one of the most beautiful of our native birds, arrives from the middle to the end of April, generally preceding the Cuckoo, and disperses over the country, extending northward as far as the middle division of Scotland. It feeds on insects, larvæ, and ants, which it seizes by means of its tongue, in the manner of the Woodpeckers. It is remarkable for a habit of twisting its neck, with a slow undulatory motion, turning its head back and closing its eyes, whence its common name. The nest is merely the rounded bottom of a cavity or hole in a tree, which the bird adapts to its purpose by means of its bill. The eggs, seven or eight, are pure white, ten-twelfths long, seven-twelfths in breadth.

Emmet-hunter. Long-tongue. Cuckoo's maid or mate. Snake-bird. Turkey Bird. Barley Bird.

Yunx Torquilla, Linn. Syst. Nat. i. 172.—Yunx Torquilla, Temm. Man. d'Ornith. i. 403.—Yunx Torquilla, Wryneck, MacGillivray, Brit. Birds, i. 100.

The beautiful, very extensive, and generally distributed family of Pigeons, appears to form an order of itself, separated by well defined limits. Some have considered it as belonging to the Rasores or Gallinaceous Birds, others as belonging to the Insessores or Perchers. In my opinion it belongs to neither.

ORDER XI. GEMITRICES. COOERS.

The birds of this order vary much in form, some having the body full, others rather slender; but this difference is more dependent upon the elongation of the wings and tail, than upon the actual form of the body, which is generally rather full, while the neck is moderate, and the head always small, oblong, compressed, with the forehead rounded. Bill short or of moderate length, straight, generally slender; upper mandible having the nasal membranes large, bare, fleshy, tumid, scurfy, and by their approximation obliterating the ridge, the extremity horny, arched or convex, more or less compressed, the tip blunt and thin-edged. Mouth narrow, but extensile, the crura of the lower mandible being slender and elastic; tongue fleshy, triangular, pointed; œsophagus of moderate width, but presently dilated into a very large crop, formed of two lobes, and lying across the neck and fore part of the breast; proventriculus oblong; stomach a powerful gizzard, of a somewhat rhomboidal form, with very large muscles, radiated tendons, and dense epithelium, having two thick, elliptical, transversely rugous plates; intestine long and slender; cœca very small, cylindrical; rectum very short. Tarsi generally short and stout, either scutellate or feathered; toes four, on the same level, the hind toe shorter than the lateral, all scutellate, laterally margined, flattened beneath; claws short, compressed, moderately arched, rather blunt. Plumage various; feathers without accessory plumule; wings large, more or less pointed; tail various.

These birds feed on vegetable substances, some chiefly on soft fruits, others on nuts, seeds of grasses, and other hard fruits, which they swallow entire, some again on the herbaceous parts of plants. They walk with ease, and even celerity; have a strong, rapid, and protracted flight; nestle on trees, bushes, rocks, the ground, or in holes, and lay two elliptical, pure white eggs. The young, at first scantily covered with soft down, are fed with substances previously softened in the crop of the parent bird, from whose mouth they receive it by introducing their bill.

FAMILY XXVIII. COLUMBINÆ. COLUMBINE BIRDS, OR PIGEONS.

There being only the single family of Columbinæ in the order Gemitrices, the characters of the family and order are the same. The variations in the form of the wings and tail, as well as other circumstances, give rise to a number of generic distinctions. The four species which occur in Britain belong to the genus Columba. A solitary individual of an American species has also been adduced, belonging to the genus Ectopistes, and as others have been met with on the Continent, it may be admitted.

GENUS LXXVI. COLUMBA. DOVE.

Bill rather short, slender, straight, compressed; upper mandible having at the base two soft, tumid, bare substances, placed over the nostrils, the dorsal line straight for half its length, arcuato-declinate toward the end, the sides convex, the tip obtuse and thin-edged; lower mandible at its base wider than the upper, its crura slender and elastic, the angle long, the dorsal line short and slightly convex, the tip obtuse. Mouth narrow; tongue sagittate, narrow, tapering to a point; œsophagus immediately dilated, and soon after expanded into a very large double or two-lobed crop,

afterwards narrow; stomach a powerful gizzard of a somewhat rhomboidal form, with very large muscles; intestine long and slender; cœca very small, cylindrical. Nostrils linear, direct, in the lower and fore part of the bare fleshy nasal membrane. Eyes of moderate size; eyelids generally bare. Head oblong, small, compressed; neck rather short, body compact, full. Legs short, rather strong; tarsi very short, roundish, anteriorly scutellate, behind scurfy; toes of moderate size; the first about half the length of the third, the lateral nearly equal; all free, marginate, with numerous short scutella; claws short, arched, compressed, rather acute. Plumage various; the feathers with extremely short tubes, and thick spongy shafts, without plumule; wings long, broad, rather pointed, of about twenty-four quills, the second quill longest; tail generally moderate, even or rounded in various degrees, of twelve broad feathers.

Four species of this genus are found in Britain. Of these, three are permanently resident, while the other, the Turtle Dove, is a summer visitant.

146. Columba Palumbus. Ringed Dove, or Cushat.

Plumage of the upper parts greyish-blue; wings and scapulars tinged with brown; hind part and sides of the neck bright green and purplish-red, with two cream-coloured patches; fore part of neck and breast light reddish-purple; a white patch on the wings, including the four outer secondary coverts.

Male, $18\frac{1}{2}$, 31, $10\frac{1}{2}$, 1, $1\frac{2}{12}$, $1\frac{4}{12}$, $\frac{6}{12}$. Female, 17, 30.

This species is generally dispersed over the wooded and cultivated parts of Britain and Ireland. It feeds on seeds of wheat, barley, oats, leguminous plants, field mustard and charlock, beech-mast, acorns, grasses, blades of clover, and leaves of the turnip. In winter it appears in large flocks, sometimes composed of many hundred individuals. It reposes on the branches of tall trees, especially beech, ash, and pine, in hedgerows, avenues, or plantations; places its nest also on trees, forming it of twigs loosely put together, in a circular form, and nearly flat above; and lays two oval, pure white, glossy eggs, an inch and seven-twelfths in length, an inch and two-twelfths in breadth. In fine weather it basks in the sun, on dry banks, or in the open fields, rubbing itself in the sand or soil. The male in spring struts and cooes, rises in the air, strikes the points of his wings against each other, descends,

rises again, and performs various gambols. The cry of this species resembles the syllables coo-roo-coo-coo, the two last protracted. Its flight is strong, light, and rapid. As an article of food it is not much esteemed. Attempts to domesticate this species have never proved successful.

Ring Dove. Wood Pigeon. Cushat, Quest, or Cushie.

Columba Palumbus, Linn. Syst. Nat. i. 282.—Columba Palumbus, Temm. Man. d'Ornith. i. 444.—Columba Palumbus, Ringed Dove or Cushat, MacGillivray, Brit. Birds. i. 259.

147. Columba Œnas. Blue-backed or Stock Dove.

Plumage of the male greyish-blue; the sides and back of the neck splendent with green and purplish-red, the lower part brownish purple-red, or vinaceous; back and lower wing-coverts blue; two short bands of black on the wing, one being on the three inner secondary quills, the other on three of the secondary coverts; bill light brown. Female similar, but with the green of the neck less extended, the purplish-red paler.

Male, 14, 26, $9\frac{1}{2}$, $\frac{10}{12}$, $1\frac{3}{12}$, $1\frac{2}{12}$, $\frac{6}{12}$. Female, $13\frac{1}{2}$, 26.

This species, which is about the same size as the Rock Dove, but from which it is distinguished by having the rump blue, in place of being white, occurs in various parts of England, residing in woods, and searching the fields for seeds and other vegetable substances. Mr Salmon states, that in the neighbourhood of Thetford, in Norfolk, it breeds in rabbit-burrows. Others inform us that it usually nestles in a hole of a decayed tree, or on a stump or pollard. This and the next species were very generally confounded by the older writers, and the present was held to be the original of our domestic pigeons, for which reason it was called Stock Dove; others say it obtained that name because it breeds on stocks.

Stock Dove. Wood Dove.

Columba Œnas, Temm. Man. d'Ornith. ii. 445.—Columba Œnas, Blue-backed Dove, MacGillivray, Brit. Birds, i. 287.

148. Columba Livia. White-backed or Rock Dove.

Plumage of the male light greyish-blue; the neck splendent with green and purplish-red; the middle of the back and the lower wing-coverts white; two black bands on the wing, one on the six inner secondary quills, the other on the secondary coverts; bill brownish-black. Female similar, but with the green and purple of the neck less extended.

Male, 14, 27, $9\frac{3}{4}$, $\frac{10}{12}$, $1\frac{2}{12}$, $1\frac{2}{12}$, $\frac{5}{12}$. Female, $13\frac{1}{2}$, $26\frac{1}{2}$.

The Rock Dove, which is the original of our domestic species, occurs abundantly in the Hebrides, Shetland, and Orkney Islands, and along the rocky shores of the northern parts of Scotland, less plentifully here and there on the coasts of other parts of Britain, as well as in Ireland. It resides in caves and crevices of rocks; feeds in the pastures and fields on seeds of various kinds; has a very rapid flight, walks gracefully and with celerity; is gregarious in winter and spring, and breeds several times each year. The male struts and cooes like the domestic pigeon. The nest, rudely composed of small twigs, grass, and other materials, is placed in a sheltered part of the rocks. The eggs, always two, elliptical, pure white, glossy, measure an inch and seven-twelfths in length, an inch and two-twelfths in breadth. Young birds taken from the nest are easily reared, and become domestic; tame pigeons sometimes associate with the wild individuals, and even breed with them; and tame pigeons, becoming wild, and resorting to the rocks or to old buildings, gradually assume the appearance of the wild rock doves. The flesh of this bird is superior in flavour to that of the Wood Pigeon, but generally more tough.

Wild Pigeon or Dove. Rock Pigeon or Dove.

Columba Livia, Temm. Man. d'Ornith. ii. 447.—Columba Livia, White-backed, or Rock Dove, MacGillivray, Brit. Birds, i. 268.

149. Columba Turtur. Turtle Dove.

Male with the head light bluish-grey, the back greyish-brown, the scapulars and small wing-coverts black with broad light red margins, the breast pale greyish-purple, the neck with two large black spots barred with white, the quills and tail greyish-brown, the latter tipped with white. Female similar, but with the tints duller.

Male, $11\frac{2}{12}$, 21, 7, $\frac{8}{12}$, $\frac{10}{12}$, $\frac{10}{12}$, $\frac{3}{12}$.

Somewhat more slender in its form, yet not much so, this species has by some authors been referred to a genus apart from the three pigeons above described. It arrives in England in the end of spring, and disperses over many of the southern and eastern counties. A few individuals have been seen in Scotland. Its habits are similar to those of the Wood Pigeon. The eggs, two in number, are white, glossy, ovate, somewhat pointed, an inch and a quarter in length, ten-twelfths in breadth. According to Montagu, the young have no black

feathers on the neck the first year. This species is different from that usually kept in cages or aviaries, and which bears the same name.

Turtle. Ring-necked Turtle.

Columba Turtur, Linn. Syst. Nat. i. 284.—Columba Turtur, Temm. Man. d'Ornith. ii. 448.—Columba Turtur, Turtle Dove, MacGillivray, Brit. Birds, i. 291.

GENUS LXXVII. ECTOPISTES. PASSENGER PIGEON.

Bill of moderate length, straight, rather slender, broader than high at the base, compressed toward the end; upper mandible with a tumid fleshy basal covering. Mouth narrow; œsophagus dilated into a very large crop; stomach a strong gizzard; intestine long and narrow; cœca very small. Nostrils linear. Eyes of moderate size. Head small, oblong; neck of moderate length; body rather slender. Feet short; tarsus as short as the hind toe and claw, anteriorly scutellate; outer toe slightly shorter than the inner; claws rather short, stout, arched, obtuse. Plumage compact, blended but firm beneath; wings long, the first and second quills longest; tail long, cuneate, pointed, of twelve or fourteen feathers.

150. Ectopistes migratoria. Long-tailed Passenger Pigeon.

Tail of twelve feathers. Male with the upper part and sides of the head light blue; throat, fore neck, and breast, light brownish-red; sides and lower wing-coverts light blue; abdomen and lower tail-coverts white; upper parts greyish-blue; lower part of neck behind and along the sides changing to gold, emerald-green, and rich crimson; some of the wing-coverts with a black spot; quills and larger coverts blackish-brown; primaries edged with blue at the base, with reddish-white toward the end; middle tail-feathers bluish-black, the rest pale blue at the base, with a patch of red and a band of black on the inner web, white in the rest of their extent. Female with the tints much duller.

Male, $16\frac{1}{4}$, 25, $8\frac{1}{2}$, $\frac{8}{12}$, $\frac{11}{12}$, $1\frac{1}{12}$, $\frac{4}{12}$. Female, 15, 23.

This species is abundantly dispersed over North America. Dr Fleming, in his History of British Animals, gives an account of an individual, which "was shot while perched on a

wall in the neighbourhood of a pigeon-house at Westhall, in the parish of Monymeal, Fifeshire, 31st December 1825. The feathers were quite fresh and entire, like those of a wild bird. I owe the possession of the specimen to the ornithological zeal and attention of the Rev. A. Esplin, schoolmaster of Monymeal." It does not appear that another individual has been met with in Britain or Ireland; but M. Temminck states that the species has occurred in Norway and Russia.

Columba migratoria, Linn. Syst. Nat. i. 285—Ectopistes migratoria, Audubon Synops. 194; Ornith. Biogr. i. 319.

ORDER XII. RADRICES. SCRAPERS.

The only general character distinctive of every species belonging to this group, is one derived from the digestive organs. A very large dilatation of the œsophagus, forming a crop, lying when distended equally on both sides of the neck, and such an enlargement of the cœca as to render their capacity at least half of that of the intestine, occur together in no other birds. It is very difficult to assign general characters of any other kind to them; but they may be described as follows:

Body large and full; neck of moderate length; head oblong, rather small. Bill short, with the upper mandible arched, transversely concave, its edges overlapping, the tip blunt. Mouth of moderate width, or rather narrow; tongue short, triangular, flat above; œsophagus narrow, but expanded into a very large subglobose crop; proventriculus oblong; stomach a powerful gizzard, of which the muscles are very large, the tendons radiated, the epithelium forming two thick, elliptical, transversely rugous plates, opposite the muscles, but in the other parts thinner; intestine long and rather wide; cœca extremely

large, with prominent internal longitudinal or reticulated rugæ. Nostrils basal, operculate, small. Eyes rather small, or moderate. Legs generally strong; tarsi of moderate length, or short, scutellate or feathered, in the former case sometimes having a spur or knob behind; three anterior spreading toes, often also a hind toe, which is always small and elevated; claws moderately arched, depressed, obtuse. Plumage full, the feathers with a large plumule; wings generally concave, short, or moderate, tail various.

Representatives of this order are found in all parts of the world. In Britain the species are not numerous, there being only eight. They feed on seeds, berries, hard fruits, buds, twigs, and herbaceous plants, occasionally insects and worms; run with great celerity; have a strong, rapid, and continued, though generally heavy flight; nestle on the ground, and lay numerous eggs. The young, born with their eyes open, and their body covered with close stiffish down, are able to run about presently after exclusion. They are led about by their mother, who manifests the greatest anxiety for their welfare, protects them from cold and wet under her wings, feigns lameness to draw intruders after her, while they remain concealed among the herbage, and points out to them the substances on which they are to feed. Many of these birds scrape up the dry leaves and earth with their feet in search of food; but the habit is not general.

FAMILY XXIX. PHASIANINÆ. PHASIANINE BIRDS, OR PHEASANTS.

Birds of large size, having the body full, the neck slender and rather long, the head small and oblong.

Bill short, strong, slightly decurved; upper mandible with the dorsal line sloping at the base, arcuato-declinate toward the end, the sides convex, the tip rounded and thin-edged. Mouth rather narrow; palate flat, with two curved, longitudinal, slightly papillate, soft ridges; tongue of moderate size, fleshy, tapering, slightly concave above, horny beneath; œsophagus narrow, but enlarged into a crop of great size, lying over the fore part of the neck and thorax; stomach a powerful gizzard of a subrhomboidal form, with very large muscles, radiated tendons, and dense epithelium, having two thickened, roundish, grinding surfaces; intestine long, rather wide; cœca very long, wider than the intestine; rectum long, cylindrical. Nostrils linear-oblong. Eyes of moderate size. Legs of moderate length, strong; tarsus stout, a little compressed, anteriorly with two series of alternating scutella, posteriorly also with two series, and generally a conical spur; toes four, strong, the first very small and elevated, the anterior connected by basal webs; claws slightly arched, rather blunt. Plumage various; wings short, broad, rounded, curved, the third and fourth quills longest; feathers on the rump elongated; tail long, graduated, or rounded, sometimes even or emarginate, of more than twelve feathers.

The Phasianinæ pass gradually into the Perdicinæ, there being no real distinction between them. Only one species of this family occurs in Britain, and even it is not indigenous.

GENUS LXXVIII. PHASIANUS. PHEASANT.

Bill short, strong, slightly decurved, higher than broad at the base, depressed at the end. The other characters as above. Plumage various, the feathers generally ovate or oblong, on the head and neck of the males splendent; eyelids bare; a large space surrounding them, and extending along the whole side of the head to the bill, also bare, and

covered with small cutaneous papillæ, intermixed with small plumules; wings short, broad, convex, rounded; the secondary quills nearly as long as the primary; tail long, graduated, slightly curved, of eighteen tapering feathers.

151. PHASIANUS COLCHICUS. COLCHIAN PHEASANT.

Male with the head and upper part of the neck of various tints of green and blue; the lower part of the neck and the sides yellowish-red, the feathers terminally margined with dark blue; those of the fore part of the back and the scapulars having three bands of yellowish, black, and red, parallel to the edges. Female with the plumage greyish-yellow, variegated with black and brown. In a variety called the *Ring-necked Pheasant*, the colours are similar, but generally somewhat lighter, and on the neck is a white band, extending along two-thirds of its circumference, narrow behind, broader at the two extremities. In another, the *Bohemian Pheasant*, the ground colour of the plumage, excepting that of the head, upper part of the neck, and middle of the breast, is pale reddish-grey, or cream-colour, deeper and more glossy on the fore neck. Individuals are often white or of various colours.

Male, 34, 32, 10, $1\frac{4}{12}$, $3\frac{2}{12}$, $2\frac{1}{12}$, $\frac{8}{12}$. Female, 26, 30.

The Pheasant, although not indigenous, is now generally dispersed in Britain and Ireland, being nourished in preserves, and in some measure naturalized, although it could not subsist with us were it left to its own resources. The males generally keep by themselves in winter, and in spring separate, each selecting a particular spot, where he struts, and invites the females by crowing and clapping his wings. The female deposits her eggs in a slight hollow, scantily lined with dry leaves. They are from six to ten in number, an inch and ten-twelfths long, an inch and five-twelfths in breadth, pale greenish-brown, or greyish-white, or yellowish-grey. Instances of crossing between the Pheasant and domestic fowl, and more rarely the Black Grouse, occur; and sometimes the female assumes the plumage of the male.

Common Pheasant. Ring-necked Pheasant. Bohemian Pheasant.

Phasianus colchicus, Linn. Syst. Nat. i. 270.—Phasianus colchicus, Temm. Man. d'Ornith. ii. 453.—Phasianus colchicus, Common Pheasant, MacGillivray, Brit. Birds, i. 114.

FAMILY XXX. PERDICINÆ. PERDICINE BIRDS, OR PARTRIDGES.

Birds of small or moderate size, having the body full, the neck short, or moderate; the head rather small and oblong; bill short, stout, broader than high at the base; upper mandible with its dorsal line at first straight, then arcuato-declinate, the edges sharp and overlapping, the tip sharp-edged and rounded; lower mandible narrower, with the dorsal line slightly convex, the edges involute, the tip narrowed but obtuse; gape-line arched. Both mandibles internally concave; tongue short, triangular, flat above, and acute; mouth rather narrow; œsophagus narrow, but opening into a very large globular crop; proventriculus bulbiform; stomach a powerful, roundish, compressed gizzard, with strong muscles, radiated tendons, and dense, longitudinally rugous epithelium; intestine of moderate length; cœca very large, oblong, internally ridged. Nostrils oblong, operculate, in a rather broad feathered membrane. Eyes of moderate size. Legs short or moderate; tarsus with a double row of scutella before, plain or spurred behind; toes rather strong, scutellate, three before, one behind, very small or sometimes wanting; claws rather strong, arched, obtuse. Plumage full, the feathers with large plumules; wings short, broad, concave, rounded; tail of twelve or more feathers, generally short, and even or rounded.

There is little essential difference between the large, long-tailed birds, called Cocks and Pheasants, and the small, short-tailed species called Partridges and Quails. Their habits also are essentially similar. The Partridges are generally distributed, but more abundant in the temperate and warmer regions. One species is plentiful in Britain, another rare and migratory, and two partially naturalized.

GENUS LXXIX. PERDIX. PARTRIDGE.

Bill short, strong, slightly curved; upper mandible having its dorsal line arcuato-declinate, the edges arched, the tip blunt; lower mandible with its dorsal line slightly convex, the edges erect or slightly involute, the tip rounded. Mouth rather narrow; tongue short, triangular, flat above, fleshy, horny beneath, acute; œsophagus narrow, with a large crop; proventriculus bulbiform; stomach roundish, with very large muscles, and dense, longitudinally rugous epithelium; intestine long, rather wide; cœca very long, narrow at the commencement, enlarged, and somewhat oblong. Nostrils basal, lateral, circular behind, linear before, operculate, the nasal groove very broad and feathered. Eyes rather small, eyelids feathered; a narrow space beneath the lower, and a larger space behind the eye and over the ear bare. Head small, oblong, forehead rounded; neck short; body full and large. Tarsus short, stout, moderately compressed, with two anterior series of scutella, the males generally with a knob behind; toes rather stout, the first very short and elevated, the inner considerably shorter than the outer, the anterior webbed at the base; claws stout, short, depressed, with convex ridge, sloping sides, and blunt point. Plumage full, the feathers oblong; wings very short, broad, curved, rounded, the fourth and fifth quills longest; tail short, rounded, generally of sixteen feathers.

152. Perdix rubra. Red Partridge.

Bill and feet bright red; upper parts reddish-brown, tinged with grey; forehead ash-grey; throat and cheeks white; a black band from the bill to the eye, and thence down the neck, becoming broader on its fore part, which is spotted with the same colour; lower parts ash-grey and light red; sides transversely banded with ash-grey, white, black, and red; tarsus of the male with a large flat tubercle.

Male, 14, 21, $6\frac{1}{4}$, $\frac{8}{12}$, $1\frac{7}{12}$, $1\frac{1}{2}$, $\frac{5}{12}$. Female, 13.

This species, which is common in Spain, Portugal, Italy, and the south of France, has been introduced into England, in some of the southern parts of which it is now not uncommon. It is said to prefer waste heathy ground to corn-fields, and to afford less sport than the common species, as it runs

before the dogs, the individuals composing a covey dispersing, and rising one after another.

Red-legged Partridge. Guernsey Partridge. French Partridge.

Perdix rubra, Temm. Man. d'Ornith. ii. 485.—Perdix rubra, Red Partridge, MacGillivray, Brit. Birds, i. 215.

153. Perdix cinerea. Grey Partridge.

Male with the bill and feet greyish-blue; upper parts minutely barred with ash-grey, yellowish-brown, brownish-black, and brownish-red; scapulars and wing-coverts darker, with longitudinal whitish streaks; forehead, cheeks, and throat light red; neck ash-grey, minutely undulated with black; sides broadly banded with brownish-red, of which there is a large patch on the breast. Female similarly coloured, but with the upper parts more brown, their markings larger, the top of the head streaked with yellowish, and the spot on the breast smaller.

Male, $12\frac{1}{2}$, 20, $6\frac{1}{2}$, $\frac{8}{12}$, $1\frac{5}{12}$, $1\frac{3}{12}$, $\frac{5}{12}$. Female, 12, 19.

Generally distributed, and permanently resident, the Grey Partridge, although not peculiar to cultivated land, thrives best in those parts which are most extensively covered with crops. It is fond of rambling into waste or pasture grounds, which are covered with long grass, furze, or broom; but it seldom enters woods, and never perches on trees. Its flight is direct, performed by rapid flaps, producing a whirring noise. It runs with great speed; feeds on grass, corn, grain, pease, field beans, seeds of various plants, insects, pupæ, and larvæ; and reposes at night on the ground, generally in an open place. In winter the Partridges keep in coveys, but separate and pair early in spring. The nest is a slight hollow, with some straws; the eggs from ten to fifteen, are pale greenish or yellowish-brown, an inch and a half long, an inch and a twelfth in breadth.

Common Partridge.

Tetrao Perdix, Linn. Syst. Nat. i. 256.—Perdix cinerea, Temm. Man. d'Ornith. ii. 488.—Perdix cinerea, Grey Partridge, MacGillivray, Brit. Birds, i. 218.

GENUS LXXX. COTURNIX. QUAIL.

Bill very short, compressed; upper mandible with its dorsal line sloping at the base, then arcuato-declinate, the edges direct, arched, the tip very narrow; lower mandible with its

dorsal line straight. Head entirely feathered. Tarsi short, compressed, stout, anteriorly covered with two series of scutella, posteriorly with two series of scales, but without spur or tubercles; toes rather slender, slightly marginate; claws slender, short, compressed, slightly arched. Wings with the first quill scarcely shorter than the second; tail extremely short, much rounded, the feathers weak and decurved.

The Quails differ from the Partridges chiefly in having the head entirely feathered, the wings straighter and more pointed, with the secondary quills shorter, the tail much smaller, so as to be concealed by the neighbouring feathers, and decurved. The males are said to be polygamous, and extremely pugnacious.

154. Coturnix dactylisonans. Wandering Quail.

Upper parts variegated with reddish-grey, and brownish-black, and marked with whitish longitudinal pointed streaks, of which are three bands on the head. Male with the throat dark brown, and a double interrupted black band on the fore neck. Female with the throat yellowish-grey.

Male, 8, 14, $4\frac{1}{4}$, $\frac{5}{12}$, $1\frac{1}{12}$, $\frac{12}{12}$, $\frac{3}{12}$. Female, $7\frac{1}{2}$.

The Quail is extensively distributed over Asia, Africa, and Europe, being in some regions stationary, in others migratory. In England it arrives about the middle of May, and departs in September; but instances have occurred of its remaining in winter both in England and in Ireland. It is not common anywhere, and is very seldom met with in Scotland. Its food consists of seeds, herbage, and occasionally insects; and its haunts are chiefly the cultivated fields and pastures. The males are extremely pugnacious, and said to be polygamous. The nest is a slight hollow, and the eggs, from twelve to twenty, are reddish-yellow, yellowish-white, or greenish-grey, marked all over with dark brown spots and blotches. It is believed that this is the species which afforded the Israelites the miraculous supply of flesh in the desert.

Tetrao Coturnix, Linn. Syst. Nat. i. 278.—Perdix Coturnix, Temm. Man. d'Ornith. ii. 491.—Coturnix dactylisonans, Common Quail, MacGillivray, Brit. Birds, i. 233.

GENUS LXXXI. ORTYX, COLIN.

Bill very short, strong, compressed; upper mandible having its dorsal line much arched, the sides convex, the tip

blunt; lower mandible with its dorsal outline convex. A bare space behind the eye. Tarsi short, strong, anteriorly covered with two series of scutella, posteriorly with two series of scales, but without spur or tubercle. Toes rather long, stout, compressed, arcuato-declinate. Wings short, much rounded, the third, fourth, fifth, and sixth quills longest; tail of moderate length, much rounded.

The Colins, which are peculiar to America, are intermediate between the Partridges and Quails, from which they are readily distinguished by the form of their bill. One species has been partially naturalized in England.

155. Ortyx Virginiana. Virginian Colin.

Male with the upper parts brownish-red, variegated with black; throat and a broad band over the eye white, loral space and a broad band passing down the neck and crossing it in front, black; lower parts greyish-white, undulated with black. Female with lighter tints, the throat and a band over the eye, light yellowish-red. Young with the feathers of the upper parts having a central yellowish line, the lower parts dull yellowish-brown, without black bands.

Male, 10, 15, $4\frac{8}{12}$, $\frac{7}{12}$, $1\frac{2}{12}$, $1\frac{2}{12}$, $\frac{4}{12}$. Female, $9\frac{1}{2}$, 14.

Abundant in North America, from Mexico to Massachusetts. Has been introduced into England, and naturalized in some of the southern counties.

Virginian Partridge. Northern Colin.

Tetrao Virginianus, Linn. Syst. Nat. i. 277.—Perdix borealis, Temm. Man. d'Ornith. iv. 335.—Ortyx virginiana, Virginian Colin, MacGillivray, Brit. Birds, i. 228.

FAMILY XXXI. TETRAONINÆ. TETRAONINE BIRDS, OR GROUSE.

The birds of which this family is composed, differ as little from the Perdicinæ, as the latter from the Phasianinæ. Some of them are of large size, others very small. They are generally bulky, with the body very full, the neck of moderate length, the head oblong and small. Bill short, stout, with the upper mandible convex, thin-edged, destitute of notches, its tip obtuse; lower mandible with

the dorsal line slightly convex, the edges erect, the tip rounded. Tongue triangular, pointed; œsophagus with an excessively large crop; stomach a very powerful gizzard, having the muscles extremely large, the epithelium with two thick concave grinding surfaces; intestine long and wide; cœca excessively elongated, cylindrical, with internal longitudinal ridges, and of greater capacity than the intestine. Feet short, stout; tarsus partially or entirely feathered; toes bare or feathered; hind toe small and elevated; claws moderate or long, arched, obtuse. Plumage full, feathers with a large plumule; wings rather short, convex, rounded; tail of more than twelve feathers. A bare papillate fringed membrane over the eye, and a bare space on each side of the neck, usually concealed.

These birds belong chiefly to the arctic and temperate regions. They feed on twigs, buds, and herbage; run with great speed, and have a direct, heavy, but rapid flight. The males in many species are polygamous and combative. The nest is placed on the ground, the eggs are numerous and spotted, and the young covered with stiffish down. Four species occur in Britain.

GENUS LXXXII. TETRAO. GROUSE.

Bill short, strong, slightly curved; upper mandible with its dorsal line nearly straight at the base, toward the end arcuato-declinate, the ridge convex, the sides rounded, the edges sharp and overlapping, the tip thin-edged and rounded; lower mandible narrower, with the angle broad, the dorsal line slightly convex, the back broadly convex, the sides convex, the edges erect, the tip rounded; gape-line arched. Mouth narrow; tongue short, triangular, flat above, pointed; œsophagus narrow, with a very large crop; stomach a powerful gizzard, of a roundish form; intestine long, rather wide; cœca extremely long, wider than the intestine, and of greater capacity. Nostrils basal, lateral, oblong, operculate, concealed by the short feathers of the nasal membrane. Eyes

of moderate size; eyelids feathered; over the upper a semilunar space of bare, papillate, fringed skin. Head small, oblong; neck moderate; body very full and large. Legs rather short, strong; tarsi covered with feathers anteriorly and on the side; toes rather small and slender; the first small and elevated, all scutellate, with a marginal series of linear, flattened, obtuse scales, projecting like the teeth of a comb; claws rather short, strong, arched, with the sides sloping, the edges thin, the tip obtuse. Plumage full, close, compact; wings short, broad, curved, much rounded; tail of sixteen or eighteen feathers, varying in form.

The Grouse, of which only two species exist in Britain, are generally strong, heavy birds, which live on vegetable substances, generally collecting their food on the ground, but sometimes also on trees. They have a strong, often rapid and protracted flight, walk and run with agility, nestle on the ground, lay numerous spotted eggs, and are in great request as objects of sport and food.

156. TETRAO UROGALLUS. WOOD GROUSE, OR CAPERCAILZIE.

Male with the tail rounded; the upper parts minutely undulated with grey and black; the throat, lower part of fore neck, and fore part of breast, black, the tips of the feathers glossy dark green; the lower wing-coverts and feathers under the tail white. Female variegated with yellowish-red, white, and brownish-black.

Male, 34, 52, 16, 2, 3, $2\frac{1}{2}$, $1\frac{1}{2}$. Female, 28.

This magnificent bird was formerly a native of the pine forests of the middle and northern divisions of Scotland. The last individual recorded as killed near Inverness, was seen by Mr Pennant in 1769. Of late, individuals have been introduced from Scandinavia, where it is plentiful, and, it is said, have succeeded in the woods of the Marquis of Breadalbane, in Perthshire; so that the species may now rank as naturalized.

Cock of the Woods. Great Wood Grouse. Capercailzie.

Tetrao Urogallus, Linn. Syst. Nat. i. 273.—Tetrao Urogallus, Temm. Man. d'Ornith. ii. 457.—Tetrao Urogallus, Wood Grouse, MacGillivray, Brit. Birds, i. 138.

157. TETRAO TETRIX. BLACK GROUSE.

Male with the tail much forked, the four lateral feathers on

each side elongated and curved outwards; the general colour of the plumage black, the neck and back glossed with deep blue; the lower wing-coverts, lower tail-coverts, and bases of the secondary quills, white. Female with the tail slightly forked, its lateral feathers straight; the general colour yellowish-red, spotted and undulated with brownish-black.

Male, 23, 33, 10, 1, 2¼, 2, $\frac{6}{12}$. Female, 18, 31.

The Black Grouse is pretty generally distributed in Scotland, in many parts of which it is very abundant. It also occurs in various parts of England and Ireland. The males separate from the rest in autumn, and keep apart until toward the middle of spring, when they engage in combats with each other, and assume particular stations, where they strut and invite the females with a loud harsh cry. The nest, composed of grass and twigs, is placed on the ground, in shelter of some low bush, or among rank grass. The eggs, from five to eight or ten, are of a regular oval shape, two inches long, an inch and seven-twelfths in breadth, yellowish-white, or pale reddish-yellow, irregularly spotted and dotted with brownish-red or blackish-brown. The males leave the females during incubation. The food of this species consists in spring of twigs and catkins of alder, birch, and willow; in summer, of tops of heath, Vaccinium Myrtillus, and Empetrum nigrum; in autumn, of heath, crowberries, cranberries, blaeberries, and whortleberries; in winter, of tops and buds of these plants and of fir; but at all seasons its staple food is heath and vaccinia. Sometimes it makes excursions into the corn fields, in search of seeds of the cereal plants. The flesh of this bird is lighter than that of the Red Grouse, especially the smaller pectoral muscles, which are nearly as light-coloured as those of a Pheasant. Being in great request, great numbers are annually killed. It has been known to breed with the Pheasant and Red Grouse.

Black Game. Black Cock. Grey or Brown Hen.

Tetrao Tetrix, Linn. Syst. Nat. i. 272.—Tetrao Tetrix, Temm. Man. d'Ornith. ii. 460.—Tetrao Tetrix, Black Grouse, MacGillivray, Brit. Birds, i. 145.

GENUS LXXXIII. LAGOPUS. PTARMIGAN.

Bill short, strong, slightly curved; upper mandible with its dorsal line arcuato-declinate, the ridge convex, the sides rounded, the edges sharp and overlapping, the tip thin-edged and rounded; lower mandible narrower, with the angle

broad, the dorsal line straight, the back broadly convex, the sides nearly erect and convex, the edges erect, the tip rounded; gape-line arched. Mouth narrow; tongue short, triangular, flat above, pointed; œsophagus narrow, with a very large crop; stomach a powerful gizzard, of a roundish form; intestine long, rather wide; cœca extremely long, cylindrical, wider than the intestine, and of greater capacity. Nostrils basal, lateral, oblong, concealed by the short feathers of the nasal membrane. Eyes of moderate size, eyelids feathered, over the upper a semilunar space of bare papillate, fringed, skin. Head small, oblong; neck short; body full and large. Legs rather short; tarsi feathered, as are the toes, which are rather small, the first very short and elevated, all with a few terminal scutella, and the anterior webbed at the base; claws rather long, arched, depressed, with the sides sloping, the edges thin, the tip obtuse. Plumage full, close, compact; wings short, broad, curved, much rounded; tail short, broad, slightly rounded, of from twelve to sixteen feathers.

The Ptarmigans differ from the Grouse chiefly in having the toes and tarsi feathered, and the former destitute of lateral linear scutella. They belong to the coldest regions, and are remarkable for becoming white in winter, excepting one species, which is peculiar to the British Islands.

158. Lagopus Scoticus. Brown Ptarmigan.

Adult male in winter chestnut-brown, inclining to red on the neck, on the body variegated with black, on the breast blackish, with many of the feathers tipped with white. Female in winter yellowish-red, spotted and barred with black. Male in summer chestnut-brown, minutely barred and spotted with black, the head and neck also barred, the breast darker and more obscurely barred. Female yellowish-red, spotted and barred with black. Young with the upper parts brownish-black, each feather edged and barred with yellowish-red; lower parts yellowish-grey, barred with brownish-black, tarsi yellowish-grey.

Male, 16, 28, $8\frac{1}{2}$, $\frac{10}{12}$, $1\frac{1}{2}$, $1\frac{1}{4}$, $\frac{8}{12}$. Female, $15\frac{1}{4}$, 25.

This species, commonly named the Red Grouse, occurs in great abundance in all the extensive heathy tracts of Scotland, England, and Ireland. When not much molested, which,

however, is now seldom the case, several families unite into packs in the end of autumn, and continue together until the middle of spring, when they separate and pair. The male remains with the female until the young are able to shift for themselves. The nest is generally a slight hollow, with some twigs and straws, among the heath or herbage of the moors. The eggs, from eight to twelve, are of a regular oval form, an inch and seven-twelfths long, an inch and three-twelfths across, yellowish-white, pale yellowish-grey, or brownish-yellow, thickly clouded, blotched, and dotted with blackish, umber, or reddish-brown. The young leave the nest soon after they are hatched, and are led about by their parents, who manifest great anxiety in their behalf. The ordinary food of this species consists of the tender twigs and leaves of Erica cinerea and Calluna vulgaris, as well as of Vaccinium Vitis idæa, and other small shrubs, together with herbaceous plants and berries, along with which they swallow particles of quartz. Its flight is direct, heavy, but on occasion rapid; it runs with great celerity, conceals itself by squatting, and is not readily raised. The male emits a loud chuckling cry, resembling the syllables cock-cock, several times repeated. The flesh of this species being very highly esteemed, great havoc is committed among it; but, as the shooting-season is limited by law, and the birds carefully preserved during the rest of the year, it still continues abundant. This bird being, in so far as is known, peculiar to the British Isles, it has been proposed, I think by Mr Neville Wood, to name it accordingly. This circumstance, however, would not of itself justify the proposed adoption of the specific epithet *Britannicus* for *Scoticus*, by which it has hitherto been distinguished, were it not that our other species appears to be absolutely confined to Scotland, and therefore peculiarly to merit the epithet *Scoticus*. Should I succeed in proving this to be the case, I would then propose naming our common Red Grouse *Lagopus Britannicus*, the British Ptarmigan; and our common Ptarmigan *Lagopus Scoticus*, the Scottish Ptarmigan.

Red Game. Red Grouse. Red Ptarmigan. Muir-fowl. Moor-fowl. Moor-cock and hen. Gor-cock.

Tetrao Scoticus, Lath. Ind. Ornith. ii. 641.—Tetrao Scoticus, Temm. Man. d'Ornith. ii. 450.—Lagopus Scoticus, Brown Ptarmigan, or Red Grouse, MacGillivray, Brit. Birds, i. 169.

159. Lagopus cinereus. Grey Ptarmigan.

Male in winter white, with a black band from the bill to

the eye, the tail-feathers greyish-black, based and tipped with white, the shafts of the primaries brown. Female in winter white, the feathers between the bill and the eye black at the base only, the tail-feathers brownish-black, based and tipped with white, the shafts of the primaries brown.

In spring, both sexes white, mottled with dark grey and yellow feathers, which are barred with black; the wings, lower parts, and tail, as in winter.

In summer, the head, neck, upper parts and sides, spotted and barred with yellow and brownish-black; the wings, lower parts, and tail, as in winter.

In autumn, the plumage of the upper parts and sides finely barred with greyish-white and greyish-black; the head, neck, and sides retaining the yellow summer feathers longest; the wings, lower parts, and tail, as in winter.

Young spotted and barred with yellow and dark brown; wings white, the shafts of the primaries dusky; tail brownish-black; the middle feathers barred with yellow and dark grey.

Male, 15½, 28, 8, $\frac{9}{12}$, 1½, 1, $\frac{7}{12}$. Female, 14, 25.

The Ptarmigan of the Grampians and other mountainous regions of the north of Scotland, is very little inferior in size to the common "Red Grouse," which it exactly resembles in form. It inhabits the higher parts of our more elevated mountains, that is, from the height of 3000 feet upwards, feeding on Calluna vulgaris, vaccinia, Empetrum nigrum, and various alpine plants. Its voice has a close resemblance to the croak of a frog. In autumn it collects into large flocks or packs, descends from the summits in winter, but never enters the lower regions. These beautiful birds, as I have elsewhere stated, while feeding, run and walk among the weather-beaten and lichen-crusted fragments of rock, from which it is very difficult to distinguish them when they remain motionless, as they invariably do should a person be in sight. Indeed, unless he is directed to a particular spot by their strange low croaking cry, one may pass through a flock of ptarmigans without observing a single individual, although some of them may not be ten feet distant. When squatted, however, they utter no sound, their object being to conceal themselves; and, if you discover the one from which the cry has proceeded, you generally find him on the top of a stone, ready to spring off the moment you shew an indication of hostility. If roused, they generally fly off in a loose body, with a direct and moderately rapid flight, resembling that of the

other species, but lighter, and settle on a distant part of the mountain, or betake themselves to one of the neighbouring summits. The eggs are similar to those of our other species, but somewhat smaller, and generally with larger blotches. As an article of food, this species is not so highly esteemed as the other, its flesh having less of that peculiar flavour which gives it its chief merit.

After examining about sixty specimens belonging to this genus, independently of several dozens of the present species, I have thought that not only is our Red Grouse peculiar to Britain, but also our Grey Ptarmigan; for, I think, the Continental bird that has been confounded with it differs as much from it, as it differs from the Lagopus rupestris of America. Should this opinion be correct, our bird might be named *Lagopus Scoticus*.

Ptarmigan. White Game. White Grouse.

Tetrao lagopus, Linn. Syst. Nat. i. 274.—Tetrao lagopus, Temm. Man. d'Ornith. ii. 468.—Lagopus cinereus, Grey Ptarmigan, MacGillivray, Brit. Birds, i. 187.

APPENDIX.

In the seventeenth number of Mr Yarrel's History of British Birds, a work remarkable for the great beauty of its engravings, as well as for more important merits, it is stated that a specimen of the Purple Martin, *Hirundo purpurea*, of America, was recently shot near Kingston, in the county of Dublin, and is now preserved in the Museum of the Royal Dublin Society. This statement is given on the authority of Mr Frederick M'Coy of Dublin. Of course, Hirundo purpurea is to be added to the list of British Birds, and comes very opportunely, as it reduces our terrestrial species to an even number. The following characters are those given by me in Mr Audubon's Synopsis.

160. Hirundo purpurea. Purple Martin.

Bill rather stout; wings as long as the tail, which is deeply emarginate; plumage silky, shining, purplish-black, with steel blue reflections; quills and tail-feathers brownish-black; tarsi and toes purplish-black. Female with the upper parts paler,

and tinged with grey, the lower light-grey, longitudinally streaked with black.

Male, $7\frac{1}{2}$, 16.

This species is generally dispersed over the United States and British Colonies of North America in summer. As we have so many visitants from that continent of late years, it would not be very surprising to find a colony of wild Turkeys in Cunnemara, especially as that species is already reported to have settled in Dalmatia. As M. Temminck says of the ornithologists, "tout le monde s'en mele." The birds themselves seem to be nearly as unsettled. We have winged visiters from the Pole, from Scandinavia, Iceland, America, Southern Europe, Africa, and Asia. Possibly a still greater interchange may yet take place, and wandering birds become permanently resident with us. As to the unsettled state of ornithology itself, opinions must always fluctuate until knowledge is perfect, which, I presume, few will assert it to be.

END OF LAND BIRDS.

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TO

WILLIAM YARRELL, Esq.,

IN TESTIMONY

OF ADMIRATION OF HIS TALENTS

AS A NATURALIST,

AND OF GRATITUDE FOR BENEFIT

DERIVED FROM THE STUDY OF HIS WORKS

ON BRITISH ANIMALS.

WILLIAM MACGILLIVRAY.

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OR

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INTRODUCTION.

In the series of Land-Birds, properly so called, the Orders and Families have been disposed according to a method in some degree corresponding with the nature of their food, those which are carnivorous being placed first, the insectivorous next, and lastly the granivorous and graminivorous. In describing the Water-Birds, strictly so called, or such as are web-footed, one might follow a similar order, placing the piscivorous kinds opposite the carnivorous terrestrial species, those which live chiefly on crustacea opposite the insectivorous, and the graminivorous Geese and Ducks opposite the Pheasants and Grouse. Or the order might be reversed, the gramivorous species being placed first, and the piscivorous last. But, in reality, an arrangement in strict conformity with the nature of the food, would prove very unnatural, inasmuch as, in many very natural families, species are found which are carnivorous, others insectivorous, and others frugivorous. Even in the same genus, Corvus, for example, one, the Raven, is carnivorous, another, the Jackdaw, insectivorous, and a third, the Rook, insectivorous and occasionally frugivorous. Nevertheless, it will be found that, in a certain degree, regimen corresponds with external form and internal organization; and I have, therefore, in the series of swimming birds, placed the grass-eating birds by themselves, under the name of Cribratrices, although some of them also eat worms and mollusca, or even fishes. The

truly piscivorous birds, as the Loons, Auks, and Cormorants, are also placed by themselves, and the series is completed by the Gulls, Terns, Fulmars, and other wandering sea-birds, which feed on fishes chiefly, but also on crustacea, insects, mollusca, and even birds and mammalia.

Between the Terrestrial and Aquatic Birds is placed an extended series, of which some species are closely allied to the one, and some to the other, of these groups. Among these "Grallatores" or "Waders," as they are named by authors, there are, in fact, some which are not at all addicted to wading, and others which are almost or entirely as much addicted to swimming as the web-footed birds themselves; so that, had they not, in their aspect and organization, a certain evident connexion, the group might be broken up, and its members allotted to the two groups of Land-Birds and Water-Birds. In truth, the question is not much different from that so much agitated among the geologists, whether it be expedient to keep up a Transition class, between the Primary and Secondary series, or to separate the rocks of that class, referring some to the former, and others to the latter. The truth is, there is no real break, no line of demarcation between the Land-Birds and the Waders, or between the latter and the Swimmers.

Birds have, however, by many authors, been primarily arranged into two series: Terrestrial and Aquatic. The former may be subdivided into two groups: Volatorial, or those which obtain their prey by flying, and Gradatorial, or such as procure it while walking. The aquatic series may, in like manner, be divided into two groups: Grallatorial, or long-legged birds, addicted to wading, and Natatorial, or birds that habitually swim. But, as among the Volatorial birds there may be some that walk occasionally, and among the Gradatorial some that are aquatic, although their affinities shew that they cannot with propriety be elsewhere placed, so among the Waders there are many that seldom, and some that never, enter the water, and among the Natatorial some

that procure their food on the land. Birds, therefore, cannot strictly be arranged according to their manner of walking or flying, any more than according to their food; but all these circumstances, and others, taken in connexion with their organization, lead to the formation of orders and families, which are in themselves more or less natural, that is, contain a series of species obviously connected with each other more than with other species.

In this Synopsis of the Birds of England, Scotland, and Ireland, the arrangement proposed is into Orders, Families, Genera, and Species, the characters of the more comprehensive divisions alluded to above, are not given; but as it was found expedient to divide it into two volumes, it was thought best to give the general title of Land-Birds to the Volatorial and Gradatorial series, and that of Water-Birds to the Grallatorial and Natatorial.

In the Introduction to the first volume, some necessary explanations were given relative to the general structure and form of birds, their different parts, their dermal system, including the plumage, mandibles, and claws, and their digestive organs. On the present occasion it is not requisite to continue the subject farther than to say a few words respecting the structure of the intestinal canal, and the trachea, which present very remarkable modifications in the different groups, and of which some afford even specific distinctions.

The width of the mouth corresponds with the size of the object to be swallowed; but one cannot always judge of its capability of admitting a large mass by its mere appearance, for a mouth may seem narrow, which is yet capable, by the elasticity of the parts, of being greatly expanded. The tongue generally aids in the prehension and deglutition of the food, and varies according to its nature, but also has evident relation to the form of the cavity in which it is lodged. When the tongue is extremely small, as in Cormorants and Gannets, it is useless with reference to prehension, and, in such cases, the bird must toss up the object

and catch it in a position favourable for swallowing, unless it may have been at first seized in a suitable manner.

The œsophagus has a width proportionate to the objects which pass through it. Thus, in Snipes, which feed on small worms, it is slender; in Crows, which swallow objects of various sizes, moderately wide; in Gannets, Guillemots, and Auks, which seize fishes, and are incapable of tearing them in pieces, of extreme width. In birds which usually obtain a large prey, but only at long intervals, or whose supply is precarious, the œsophagus is dilated into a pouch, intended as a reservoir, in which they can stow away a quantity of provision for future use; as in Vultures and Eagles. Sometimes, where the objects obtained are small or moderate, and the time of feeding limited, the œsophagus has no dilatation, but is uniformly wide, and the stomach is also dilated, as in Owls and Goatsuckers. The largest dilatations of the œsophagus are in birds which feed on vegetable substances, as seeds, twigs, leaves, stems, and roots, which require to be gradually pounded, and which must be supplied by the reservoirs to the grinding organ; as in Pigeons, Grouse, and the like.

Generally, the œsophagus merely affords a passage to the food, without acting upon it; and the crop merely contains and moistens its contents; but, when the food is of such a form as to be incapable of entering the stomach at once, as in the case of a fish of large size, part of the œsophagus has a solvent action upon it. The glandules placed in the walls of the proventriculus, or lower part of the œsophagus, secrete exclusively the solvent fluid, as is evident from the fact that food in general undergoes no change until it arrives there, and is always found to be acted upon when mixed with the proventricular fluid; which, however, in the case of fish-eating birds, extends some way upwards into the œsophagus. Generally, the width of the proventriculus is not greater than that of the œsophagus; but in many fish-eating

birds, it is much wider, and in some, as the Petrels and Fulmars, enormously dilated.

In most birds, the solution of the food is effected in the stomach, which is membranous, or very thin, in those that feed on flesh or other soft substances easily soluble; but muscular in those which feed on hard substances, or on such as require mechanical division. When the walls of the stomach are very thin, and not capable of pounding, the bird, should it swallow hard or insoluble substances, as bones, hair, feathers, elytra, and the like, must get rid of them by vomiting, as is the case with Hawks, Owls, Goatsuckers, and Cuckoos. In cases where circumstances render it inexpedient to get rid of these hard substances, the stomach is muscular, though often small, and apparently intended for no other use than that of pounding such as may have escaped the action of the proventicular fluid; as in Petrels and Gulls. Birds which feed on vegetable substances, not easily digestible until pounded into a pulpy mass, have the stomach furnished with enormous muscles, and a hard inner coat, on which are two opposite grinding plates, and in them the cavity of the stomach is small, so that a moderate quantity only is admitted at a time. Of this kind is the stomach in Pheasants, Partridges, Grouse, Geese, and Ducks. This muscular grinding stomach also exists in many birds which feed on animal matters which are enveloped in hard cases, as crustacea, insects, and the like. This is the case with all running and wading birds, excepting Herons, which feed on fishes and soft reptiles.

In most birds, the pylorus allows nothing to pass but the finest pulp, so that no coarse particles are seen in the intestine. But in the vegetable-eaters, as the Radrices and the corresponding series of Cribratices, the whole mass of the food, coarsely pounded, passes into the intestine. Their fæces, accordingly, resemble those of the ruminating mammalia and pachydermata, which feed on similar substances. When the food is flesh, and therefore nutritious and easily

soluble, the intestine is short and narrow; when it consists of fish, it is also often short and slender; when of various substances, animal and vegetable, it is of moderate length and width; and when of comparatively innutritious vegetable matter, it is very long and wide. It is in the duodenum, or first fold of the intestine, that digestion is perfected, by the aid of the pancreatic juice; and a little farther on, that, on being mixed with the bile, the chyle is deposited on the villous surface of the intestine, whence it is absorbed.

At the commencement of the rectum, which is analogous to the colon and rectum of the mammalia, are placed two lateral blind-guts, or cœca, which vary extremely in size. They receive their greatest development in Grouse, which feed on comparatively innutritious vegetable matter, and are smallest in the flesh-eating birds, whose food is most nutritious. In the Radrices, in some of which the cœca have a capacity as great as that of the intestine, sometimes even greater, the finer particles of the mass of food which have not been sufficiently acted upon in their course, enter the cœca, and are subjected to a second digestion and absorption. This is also the case in the Cribratrices, which feed on similar substances. In most other birds, the cœca are small and secrete a mucous fluid only, but do not admit the food. It is very remarkable, that in Owls, whose food is like that of Hawks, the cœca are large, and act upon the food, while in these birds they are merely rudimentary. The reason may be, that while Hawks prey by day, and can fill not only their stomach but their crop also, so that the assimilative function requires no special care,—owls, which prey by night and have no crop, require to have their comparatively scanty food better husbanded, and thus submitted to a more special action. Goatsuckers have the same relation to Swifts. Some birds have no cœca, as Kingfishers, Woodpeckers, and Hummingbirds. Others, as Herons, have no organs precisely similar, but are furnished with a single cœcum, like that of the mammalia, but small.

It is remarkable, that many fish-eating birds have an extremely slender and elongated intestine, while others have it moderate in both respects, and in others it is both long and wide. . Why these differences should exist, is not very apparent; but I have observed, that in all those piscivorous birds which plunge headlong or dart upon their prey, it is very slender. Even among the Falconinæ, the species which feed on fishes, as the Osprey and Sea-Eagle, have the intestine thus modified.

The vocal and respiratory organs, being alluded to in the ordinal characters, may be now briefly noticed. In all birds, the *trachea*, or windpipe, is composed of a series of complete cartilaginous or bony rings, constituting a flexible tube, capable of being shortened or elongated by the action of two lateral muscles, and the peculiar manner in which the rings are made alternately to overlap each other. The upper aperture of this tube forms a longitudinal slit, which is opened or closed by muscles acting upon the cartilages or bones which form its frame. It is in this upper or anterior part, the larynx, that the voice is produced in the mammalia; but in birds, although the larynx and mouth may modify the voice, its peculiar organ is the lower part of the trachea, where it divides into the two bronchi which go to the lungs. The last ring is divided by a bony partition, and furnished with membranes, the action of the expired air on which causes sound. The modulations of sound are produced here by the action of small muscles upon the rings and membranes. Birds which emit merely a scream, or unmodulated sounds, have no peculiar muscle at this part; such are Vultures, Swifts, Pheasants, Partridges, Pelicans. Those which emit sounds slightly varied have a single pair of muscles; as Hawks, Woodpeckers, Pigeons, Rails, Gulls, and Divers. Some have two pairs, as Parrots; the Kingfishers have three pairs; and all the Cantatrices, Deglubitrices, and Vagatrices, have four pairs. The form of the inferior larynx varies much, being small or large, compressed, flat-

tened, of single or united rings ; and sometimes, as in Ducks and Mergansers, there is connected with it, in the males, a curious bony and membranous expansion, the use of which is not apparent.

But the details of the organization of birds do not require to be further entered into here, where the object is not to present a treatise on that subject, but to afford the explanations necessary for the occasion. The careful dissection of a few species will afford a more correct idea than could be given by mere description.

With a little of this sort of knowledge, and an acquaintance with technicalities, the student who has some enthusiasm may derive much pleasure from the observation of birds. Should he connect these objects of his pursuit with the various natural objects and phenomena with which he finds them associated, he has little chance of becoming a mere collector of skins and eggs. Such persons, confining their views to the most superficial aspect of nature, are more to be pitied than praised. Yet even they derive pleasure from their pursuits ; for who can contemplate nature in any way without being gratified ? The cultivators of every branch of Natural History are full of its praises ; and surely for this enthusiasm no one ought to blame them, were it not that frequently he whose affections are engaged by one set of objects, despises not only all other objects, but also those who admire them more than they admire his own favourites.

The method which I would recommend to a person desirous of becoming acquainted with the birds of this country, is somewhat different from that usually pursued. Let him begin with obtaining a dead bird of any kind—a partridge or gull, for example. Let him examine its exterior, passing in review the bill, the nostrils, the eyes, the apertures of the ears ; the tarsi, toes, and nails ; the plumage in detail ; the wings, and the tail. Let him pull out a feather here and there ; examine its tube, shaft, and filaments ; compare the extent of the downy part with that of the more compact ter-

minal portion; observe the plumule, the outline, and tip of the feather itself, and the manner in which it is coloured. Let him count the quills in the wing, take notice of their comparative length, form, and texture. Let him treat the tail in the same manner. Let him then pluck off all the feathers, and observe, by the marks left in the skin, how they have been arranged. The down, which still covers the skin, is now to be submitted to examination; as well as the small bristles or hair-like feathers. When the bird is thus bared, he will better see its form, and will find that sometimes a neck which seemed thick and strong, becomes thin and weak when deprived of its plumage; that short legs have become long, or a flattened body narrowed.

The knife and the scissors are now to be used. The skin, with its subjacent fat and cellular tissue, may be next examined. The principal muscles that move the limbs may easily be traced. The eyes may be cut out and inspected. The windpipe will lead him into the thorax, where he will find the lungs. The tongue, the œsophagus, and the stomach, afford interesting objects of remark; as do the other contents of the thoracic and abdominal cavities—the intestine, liver, spleen, pancreas, and kidneys; the heart and pericardium; the various cellules, permeated by the air which passes through the lungs, and the imperfect diaphragm; the ovaries, or other genital organs.

This superficial examination will disclose some things, and leave many partially understood. By proceeding thus, knowledge will be gained by degrees, doubts will be solved, and errors rectified. A friend, more advanced, may perhaps assist; or various anatomical works may be consulted. The vascular and nervous systems, and the organs of sense, will also require attention. Perhaps the skeleton may be prepared, that its parts may be inspected. This is not a difficult task. Let the soft parts be carefully removed from the bones, which are to be left united by the ligaments. The operation may take several hours of several days. The

best way is to begin with the head, proceed along the vertebræ, clear the trunk, the tail, the wings, and the feet. Let the preparation be placed each night in water. When the whole is cleaned, the brain must be removed through the occipital foramen, and the interior of the long bones washed out with a syringe, access being obtained by a hole bored at each end. When the skeleton has been so long macerated in water as to be free of blood, let it be put into a natural position, and retained there by means of wires and threads until quite dry, when it may be fastened to a stand.

Meanwhile, the young ornithologist will occasionally stroll abroad, and obtain a bird. To find its name, he will first inspect it well, and then compare its details with the characters given in the present Manual. Suppose it to be a common Sparrow, its strong conical bill will shew at once that it belongs to the Deglubritrices, with which he will find it to correspond in all respects. The same organ and others will refer him to the family of Passerinæ, the genus Passer, and the species domesticus. Many birds he will find without difficulty, some may appear doubtful. Let him depend little upon other persons for information, but trust chiefly to himself, and resolve to accomplish his task. Difficulties will daily become fewer.

The study of the habits of birds will afford much pleasure. There, for example, by the brook, is a small, compact, short-tailed, black, white-breasted bird. You approach it so cautiously and cunningly, that it does not perceive your presence. It stands on a stone, jerks up its tail, alternately lowers and raises its body on its legs ; now, it walks out into the water, disappears beneath the surface, suddenly bobs up in the middle of the current, swims to the stone, and resumes its jerks, uttering a short note, somewhat like the sound produced by knocking one pebble against another. It is the Dipper. In the wood you hear the moaning and melancholy-seeming cry of some pigeon, which, perched on a top-twig, thus talks to its mate, seated in a large flat nest formed apparently of twigs. You know it must be the Cushat

or Wood-Pigeon. Over the meadow, a reddish-coloured hawk is hovering with rapid but scarcely perceptible movements of its expanded wings. It is fixed, as it were, in a particular spot, evidently intent on something that lies on the ground beneath it. Now it advances, hovers, sweeps away, hovers again, descends like a stone, and flies off with something in its claws. It must be the Kestrel. And thus one continues taking note, and recording his observations, not merely in his memory, but also on paper. He searches for nests, too, collects eggs, and, in short, does all that he can to master his subject. Such a person cannot fail to know something about birds sooner than he who merely goes to a museum to study them. It may be said that all this labour is misapplied, for that after all little good is done by it; but I am not here to argue about utility, but simply to shew how one may become an ornithologist. The propriety of becoming so he must settle with his own conscience.

A naturalist and a mere collector are quite different persons. Every naturalist must be a collector; but there are those who, having a certain liking to natural objects—often also to prints, paintings, teapots, snuff-boxes, tobacco-pipes, clubs, spears, swords, and in short almost any thing collegible,—accumulate day after day, ticket, arrange, dust, and fondle their specimens, until they have lost sight of nature altogether. They neither use them, nor allow another to apply them to any reasonable purpose.

Among the objects to be collected by the ornithologist are nests and eggs. The former may be kept in large boxes fitted with trays, or in cabinets. Eggs, arranged in small card-boxes partially filled with cut moss, are not only very beautiful, but useful objects. They should be blown by making small openings in the shell, not at the two ends, but near them. Or the contents may be extracted by sucking them into the large bulb of a pointed glass tube made for the purpose, or in various other ways. In collecting eggs,

one has many opportunities of observing the habits of birds, which he would miss if he had no such object in view.

A visit to some remarkable breeding-place of sea-fowl will afford amusement and instruction. Gliding along the base of the cliffs in a boat, you see the Kittiwakes scattered in multitudes along the face of the rock, each on its nest, their pure light plumage contrasted with the dusky tints around them. Partially intermixed with these birds, but generally occupying a higher station, are thousands of Auks, ranged in lines, with their white breasts toward the sea. Farther up are Guillemots in like numbers. Thousands are flying in from the deep, where they have been fishing. There they come, pack after pack, bouncing along on their short rapidly-moving wings, rising in a curve as they face the cliff, and alighting like a ball abruptly. High overhead, Puffins, obscurely seen, are standing in groups near their holes, which they have burrowed in the turf. Patches of sea-campion, sea-pink, and grasses, stand out in luxuriant tufts here and there. The rock in many places looks as if white-washed with the dung of the numberless birds that, year after year, have frequented it. When a shot is fired, multitudes leave their seats, launch into the air, and wheel away in circular flight, their mingling notes filling the air with one shrill loud scream, in which individual cries can scarcely be distinguished. A man is on the rock gathering eggs; and if you join him in this occupation, it will require due care to keep your footing. But here is a dark cavern, at the mouth of which are stationed, like sentinels, some sable-plumed birds, whose long necks writhe to and fro as they survey us. We approach, and they fly overhead or drop headlong into the water, dive, and, swimming under us, reappear at some distance on the sea. Here, amid patches of white dung-wash, a characteristic feature of such scenes, are the clumsily constructed nests, containing each two or three slender white eggs, or so many half-naked dusky young

ones. Some rock-pigeons now fly out, and you wonder how birds so beautiful should consort with these dingy croakers. As we proceed, leaving the breeding-colonies, some great Black-backed Gulls, Herring-Gulls, and Terns, hover around us, and on the distant point we perceive a troop of Oyster-catchers. But the winds and the waves are rising, a strong current sets in from the ocean, and we must bear away for the landing-place.

Should the ornithologist endeavour to make himself in some measure acquainted with rocks and plants, he would be so much the better qualified for his own particular profession. There is nothing incompatible in these branches of Natural History; and, therefore, he needs not regard the sneers of collectors in any particular department, who, having a mere dry technical knowledge of their own favourite branch, attempt on all occasions, for the purpose of commending themselves, to throw discredit on those who profess a little acquaintance with it; whereas they ought, in the exercise of a liberal spirit and of Christian charity, to invite all to partake in the pleasures which they themselves experience. In all professions there are illiberal and mean-spirited individuals, whose delight it is to thwart all who do not side with them; and in ornithology I have met with such, but their opposition has had no effect in impeding my progress. With a sound body, a clear conscience, a good gun, and a note-book, pencil, and knife, the student of ornithology may bid defiance to all opponents and detractors, and with light steps tread the heath or climb the mountain-slope. Friends engaged in similar pursuits will sympathize with him, and kindred minds, even if removed hundreds of miles from each other, will indicate their mutual affinity by kind acts. In this respect, however, the ornithologist does not differ from the cultivator of any other branch of Natural History.

There may be countries more favourable for the acquisition of ornithological knowledge than this; but still, the Briton has a wide field in his native land. Many of the

habits of the feathered denizens of our fields and woods are yet very imperfectly known, and the histories of most of them consist merely of detached fragments. There is not much difficulty in knowing the greater number of our birds by sight; but such a knowledge as a botanist has of a plant is not enough, for the bird being a creature possessed of diverse faculties, has a far more complex history than a plant; and the labour bestowed on forming acquaintance with an Eagle or a Peregrine Falcon, would enable one to know by sight a hundred plants.

As it may be of advantage to the student to have a comprehensive view of the number of Birds of the British Isles, I shall here present them in a tabular form, according to the arrangement followed in these volumes.

	Regular.			Accidental.			
	Resident. Indigenous.	Summer.	Winter.	Northern.	Southern.	American.	
Vulturinæ, ...	..	..	..	..	1	..	1
Falconinæ, ...	14	..	1	1	2	1	19
Striginæ,.....	4	..	1	2	3	..	10
Cypselinæ, ...	..	1	..	..	1	..	2
Hirundinæ,.....	..	3	..	..	..	1	4
Caprimulginæ, ..	..	1	..	..	..	1	1
Cuculinæ, ...	..	1	..	..	..	..	1
Alcedinæ, ...	1	..	..	..	1	..	2
Laniinæ, ...	1	2	..	..	1	..	3
Myiotherinæ, ...	..	2	..	..	..	..	2
Coraciinæ, ...	..	..	..	..	1	..	1
Corvinæ, ...	8	..	..	1	1	..	10
Graculinæ, ...	1	..	..	..	1	..	2
Oriolinæ,.....	..	..	..	..	1	..	1
Myrmotheriæ....	1	..	..	..	..	..	1
Turdinæ,.....	3	1	2	..	1	..	7
Saxicolinæ,.....	3	3	..	1	2	..	9
Sylviinæ, ...	3	11	..	1	2	..	17
Motacillinæ, ...	2	1	..	..	2	..	5
Alaudinæ, ...	5	1	..	1	1	..	8
Parinæ, ...	6	..	..	..	..	..	6
Ampelinæ, ...	..	..	..	1	..	..	1

	Regular.			Accidental.			
	Resident.	Summer.	Winter.	Northern.	Southern.	American.	
	Indigenous.						
Emberizinæ, ...	4	1	..	1	1	..	7
Passerinæ, ...	14	1	..	2	..	1	18
Certhiinæ, ...	1	..	..	..	1	..	2
Sittinæ, ...	1	..	..	..	..	..	1
Picinæ, ...	3	1	..	..	1	..	5
Columbinæ, ...	3	1	..	..	..	1	5
Phasianinæ, ...	1	..	..	..	..	..	1
Perdicinæ, ...	3	1	..	..	..	..	4
Tetraoninæ, ...	4	..	..	..	..	..	4
Gruinæ, ...	..	..	..	..	1	..	1
Otinæ, ...	1	..	..	..	3	..	4
Pluvialinæ, ...	7	..	1	1	1	..	10
Tringinæ, ...	5	1	6	3	..	3	18
Totaninæ, ...	3	1	2	..	2	1	9
Scolopacinæ, ...	3	..	2	..	..	1	6
Gallinulinæ, ...	4	1	..	..	2	..	7
Ardeinæ	2	..	..	..	10	1	13
Ibidinæ, ...	..	..	..	..	2	..	2
Anserinæ, ...	2	..	6	1	2	1	12
Anatinæ, ...	4	..	4	1	1	..	10
Fuligulinæ, ...	1	..	7	4	..	2	14
Merganserinæ.	2	..	1	..	..	1	4
Podicipinæ, ...	6	..	2	..	..	..	8
Alcinæ, ...	4	1	..	2	..	..	7
Pelecaninæ, ...	2	1	..	..	..	..	3
Sterninæ, ...	..	6	..	..	3	..	9
Larinæ, ...	7	1	1	..	6	2	17
Procellarinæ, ..	4	..	..	1	1	2	8

The List of British Birds thus includes:

Of Permanently resident and breeding species, .	143
Summer Birds which breed with us, .	44
Winter residents, ...	36
Stragglers from the north, ...	23
Stragglers from the south and east, . .	55
Stragglers from the west, ...	19
The entire number, ...	320

WATER BIRDS.

ORDER XIII. CURSITRICES. RUNNERS.

The species of this Order which occur in Britain are so few, that, by examining them only, one cannot acquire a comprehensive or even a correct idea of the series; which is composed of birds of all sizes, from the largest known, the Ostriches and Cassowary, to the Pratincole, not much larger than a Swift. The families which are considered as entering into it are the STRUTHIONINÆ, GRUINÆ, OTINÆ, and PLUVIALINÆ. Of the first there are no representatives in Europe, and therefore it is unnecessary to say more of them here, than that they are distinguished among the fissipede birds by having wings not adapted for flying, just as the Penguins are among the palmipedes. Setting aside these birds, then, we may consider the general characters of the Cursitrices to be somewhat as follows:—

Body ovate, more or less compressed; neck generally long and slender; head rather small, ovate, rounded above. Bill of moderate length, straight, or nearly so, compressed toward the end, but rather wide at the base, and opening under the eyes; the nasal sinus large. Mouth of moderate width; tongue tapering, fleshy, acute; œsophagus moderately wide, with its walls thick; proventriculus bulbiform; stomach a gizzard of considerable power, having strong lateral muscles, dense and rugous epithelium; intestine of moderate length and width, with large or moderate cœca; the rectum with a globular dilatation. Nostrils linear or oblong, subbasal or medial. Eyes rather large. Aperture of ear moderate. Legs generally long

and slender; tibia bare to a great extent; tarsus long, reticulated all round, but in some instances scutellate anteriorly; toes short or moderate, thickish, flattened beneath, the anterior spreading and webbed at the base; the hind toe wanting or small, and more or less elevated; claws short and obtuse. Plumage moderate, the feathers with a large plumule. Wings large, generally pointed, but varying in form; tail short.

All the species feed on insects and worms, and occasionally on vegetable substances, their digestive organs being adapted for both sorts of food. They nestle on the ground, laying from three to five eggs. The young, at first densely covered with down, run about presently after birth, and conceal themselves by crouching. The males are larger than the females, and sometimes differently coloured, at least in part. Most of the species are in some degree migratory.

FAMILY XXXII. GRUINÆ. GRUINE BIRDS, OR CRANES.

Birds of large size, having the body ovate and compressed; the neck elongated; the head rather small, oblong, and somewhat rounded above. Bill about the length of the head, straight, depressed at the base, compressed toward the end, the tip rather blunt; upper mandible with the dorsal line nearly straight, a little declinate at the end, the ridge flattened at the base, rounded toward the end, the nasal groove large; lower mandible with the angle long and very narrow, the tip slender; gape-line commencing much anterior to the eyes. Nostrils linear, direct, in the fore part of the nasal groove. Eyes of moderate size, eyelids bare. Aperture of ear rather small, roundish. Legs very long and slender; tibia bare to a great

extent; tarsus moderately compressed, anteriorly scutellate, reticulate on the sides; toes four; the first very small and somewhat elevated, the anterior rather short, stout, scutellate above, somewhat flattened beneath, the second a little shorter than the fourth; claws short, little compressed, obtuse. Plumage full, rather compact; wings very long, ample, convex, rather pointed; the inner secondaries elongated and decurved; tail short, rounded.

GENUS LXXXIV. GRUS. CRANE.

Bill considerably longer than the head, stout, straight, tapering, compressed, obtusely pointed; upper mandible with the dorsal line straight, until near the end, when it is declinate and somewhat convex, the ridge rather broad and nearly flat for two-thirds, then convex, the sides sloping, the edges strong, sharp, straight, without notch, the tip narrowed, thin-edged, rather obtuse; nasal groove large, half the length of the bill, filled by a bare membrane; lower mandible with the angle very narrow and extending to the middle, the dorsal line ascending, almost straight, the sides of the crura concave, the edges sharp and strong, the tip narrow, rather obtuse; gape-line straight, commencing opposite the base of the ridge. Mouth very narrow; palate convex, with three longitudinal anterior series of strong horny papillæ; upper mandible internally moderately concave, with a prominent median line; tongue rather long, emarginate and papillate at the base, trigonal, acute; œsophagus rather narrow, without crop; stomach a very strong gizzard, having powerful lateral muscles, and a dense rugous epithelium; intestine of moderate length, rather narrow; two oblong cœca. Trachea moderately flattened, curved and entering a cavity in the sternum, whence it is reflected before passing into the thorax; bronchi wide. Nostrils linear, direct, submedial. Eyes of moderate size; eyelids bare. Aperture of ear small, roundish. Legs very long; tibia bare about a fourth of its length, reticulated; tarsus very long, slender, moderately compressed, with numerous curved scutella before, small

elongated hexagonal scales on the sides, and larger scales behind; toes four, the first very small, the anterior rather short and stout, scutellate, the outer longer than the inner, and connected with the third by a basal web; claws short, decurved, rather obtuse. The greater part of the head bare, or sparsely covered with hair-like feathers. Plumage soft, but imbricated; the feathers with moderate down-plumules, those of the neck small, oblong. Wings very long and ample, of about thirty-five quills; the third quill longest, but little exceeding the outer two; the inner secondaries much elongated, curved downwards, and with their filaments loose toward the end, some of their coverts similarly elongated; tail short, rounded, of twelve feathers.

Although the Cranes have by most authors been associated with the Herons, which they somewhat resemble in form, they differ very essentially from these birds in having the mouth narrow, the stomach muscular, and the intestine furnished with two cœca. Their young also run with celerity from the first.

161. Grus cinerea. Grey Crane.

Fore part of the head and loral spaces bare, or sparsely covered with black hairs, and of a bluish-black colour; crown also bare and bright red; bill greenish-black, greyish-yellow toward the end; plumage ash-grey; fore part of neck and a triangular patch on the nape dark-grey; a band of dull white from the eye down the side of the neck; primary quills greyish-black; the elongated decurved inner secondaries grey, with the filaments loose and blackish-brown. The young, according to M. Temminck, have little or no bare space on the top of their head before the second autumnal moult, and the blackish-grey colour of the fore part of the neck and the nape does not exist, or is merely indicated by longitudinal spots.

Male, 49, .., 21, $4\frac{1}{4}$, $9\frac{1}{2}$, 3, $\frac{5}{12}$. Female, 44.

Although Cranes are said to have formerly bred in the fens, they are now of extremely rare occurrence in England, not so many as a dozen individuals being recorded as having been killed there within these forty years. The last example occurred in Shetland in 1831. On the Continent, they arrive in flocks, arranged in lines or triangles, about the end of spring, generally keeping at a great height. They alight in the tem-

perate parts only to feed or rest for a short time, and proceed to the most northern regions, where they breed, nestling in marshy places, and laying two eggs of a greenish-grey colour, with brown spots. They are remarkably swift-footed, but rise on wing with difficulty. Their food consists of vegetable substances, worms, and insects.

Common Crane.

Ardea Grus, Linn. Syst. Nat. i. 234.—Ardea Grus, Lath. Ind. Ornith. ii. 674.—Grus cinerea, Temm. Man. d'Ornith. ii. 567.—Grus cinerea, Grey Crane, MacGillivray, Brit. Birds, iv.

FAMILY XXXIII. OTINÆ. OTINE BIRDS, OR BUSTARDS.

The birds of this family vary greatly in size, some being very large, while others are so small that their resemblance in form is not at first sight obvious. In external appearance they may be said to be intermediate between Partridges and Plovers; or they resemble Gallinaceous birds of which the legs are elongated, and the toes shortened. Their body is ovate, large, little compressed; the neck long and rather slender; the head of moderate size, ovate, somewhat compressed, and rounded above. Bill shorter than the head, moderately stout, or rather slender, nearly straight, or sometimes considerably arched, broader than high at the base, compressed toward the end; upper mandible with the dorsal line straight to the middle, then declinate and convex, the ridge narrow, the nasal sinus large, and filled by a membrane which is feathered at the base, the edges partially inflected, the tip narrow; lower mandible with the angle long and narrow, the dorsal line slightly ascending and nearly straight, the edges sharp and direct, the tip narrow; the gape-line little arched, and commencing before the eyes. Mouth of moderate width, or rather narrow; tongue trigonal, fleshy, tapering; œsophagus rather narrow, without dilatation; proventriculus bulbiform; stomach a strong gizzard, with the lateral muscles large, and the epithelium dense; in-

testine of moderate length and width, cœca long. Nostrils oblong or linear, direct, slightly operculate, nearly basal. Eyes rather large. Aperture of ear large. Legs long, rather slender; tibia bare to a considerable extent; tarsus long, reticulated; toes short, the first generally wanting, scutellate above, marginate, flattened beneath, with short basal webs; claws short, arched, convex, obtuse. Plumage moderate, compact; wings large, pointed; tail short, of twelve or more feathers.

The Otinæ have been referred by some in part to the Gallinaceous order, and in part to the family of Plovers, to both of which they have evident relations. Their flight is strong and sustained, in the larger species seldom employed on ordinary occasions, but in some of the smaller, habitually used. They all run with very great speed, and most of them feed on vegetable substances, worms, and insects. The young, covered with down, run from the first. The males are larger than the females. Four species of this family occur in Britain, all of them very rare, although one was formerly numerous.

GENUS LXXXV. OTIS. BUSTARD.

Bill shorter than the head, moderately stout, nearly straight, depressed at the base, compressed toward the end; upper mandible with the dorsal line straight for half its length, then declinate and convex, the ridge narrow to beyond the nostrils, the nasal sinus large and feathered at the base, the edges inflected for half their length, then direct, the tip narrowed but blunt; lower mandible with the angle long and narrow, the dorsal line slightly ascending and nearly straight, the edges sharp and direct, the tip narrow but blunt; the gape-line little arched. Mouth rather narrow; upper mandible internally with three prominent lines, lower more deeply concave; œsophagus rather narrow; proventriculus bulbiform; stomach oblong or roundish, very muscular, with radiated tendons, large lateral muscles, and dense rugous epithelium; intestine of moderate length and width; cœca

very long and wide. Nostrils linear, oblong, direct, slightly operculate, nearly basal. Eyes rather large. Aperture of ear moderate. Legs long, and rather slender; tibia bare for a third of its length, and reticulate; tarsus long, reticulated with oblong subhexagonal scales; toes three, short, scutellate above, marginate, spreading, with short basal webs; claws short, depressed, convex, arched, thin-edged, obtuse. Plumage moderate, compact; feathers narrow on the head and neck, ovate on the body; wings long, broad, rather pointed, the third quill longest, the second little shorter, the first as long as the fifth; tail short, of more than twelve feathers.

Although furnished with large wings, these birds on ordinary occasions make little use of them; yet their flight is strong and sustained. They run with great speed, couch on the ground to avoid their enemies, feed on vegetable substances, worms, and insects, form a slight and rude nest among the herbage, or a mere cavity, and lay from two to five or more spotted eggs. Two species occur in Britain.

162. Otis Tarda. Great Bustard.

Male with a tuft of slender elongated feathers from the chin on each side; the bill yellowish-brown, the feet brown; the head and upper neck greyish-white; the lower hind neck, back, scapulars, and upper tail coverts, light reddish-yellow, transversely barred with black; wing-coverts and inner secondaries white; primaries black, with the shafts white; tail of twenty feathers, barred with yellow and black, and tipped with white; fore part of neck, and all the lower parts white. Female much smaller, similar to the male, but with the tufts from the chin wanting or short. Tail of twenty feathers.

Male, 44 . ., 24, 2½, 9, 4, ½. Female, 35.

The Great Bustard, formerly plentiful in many parts of England, is now of rare occurrence there, being found occasionally in the southern, eastern, and north-eastern counties. In Scotland, the only district in which it has of late years been seen is the low part of Morayshire. It is said to have been hunted with greyhounds; yet many observers state that it rises on the wing without difficulty, and has a strong sedate flight. It runs with great speed, is generally very shy, keeps in flocks, and feeds chiefly on vegetable substances, but also on insects and worms. The nest is rudely constructed, among grass or corn; the eggs, according to Mr Yarrell, two or three

in number, nearly three inches long, two inches and two-twelfths in breadth, olive-brown, sparingly blotched with pale greenish-brown. On the Continent, where this bird is more common, it is often exposed in the markets, its flesh being highly esteemed. It is said to be polygamous.

Common Bustard. Bearded Bustard.

Otis Tarda, Linn. Syst. Nat. i. 264.—Otis Tarda, Lath. Ind. Ornith. ii. 658.—Otis Tarda, Temm. Man. d'Ornith. ii. 506.—Otis Tarda, Great Bustard, MacGillivray, Brit. Birds, iv.

163. Otis Tetrao. Little Bustard.

Male about eighteen inches long; in summer, with the upper part of the head and the nape pale reddish-yellow, variegated with brownish-black; the throat and sides of the head light greyish-blue; a narrow ring of white on the neck, succeeded by a broad collar of black, below which anteriorly are a half ring of white and another of black; the upper parts pale reddish-yellow, transversely undulated with black; the edge of the wing, the alula, outer secondary coverts, basal part and tips of the quills and tail feathers, together with all the lower parts of the body, white; the tail of sixteen feathers. Female with the head, neck, upper parts and sides pale reddish-yellow, streaked and undulated with brownish-black; throat white; the other parts as in the male. In winter the male resembles the female.

Male, 18, 35, 10, 1, $2\frac{8}{12}$, $1\frac{1}{12}$, $\frac{5}{12}$. Female, 17.

This species, which is said to inhabit the countries bordering the Mediterranean, to be common in the southern parts of Europe, where it resides all the year, but to become rare as we proceed northward, ranks in Britain merely as a straggler, although it has been killed in England at all seasons. In Scotland it is extremely rare, the only individual recently obtained there, a female, having been shot by Mr Adamson, near St Andrews, in March 1840. The Little Bustard is remarkably shy and vigilant, runs with great speed, and flies well, although on ordinary occasions it seldom rises on wing; feeds on worms, insects, herbs, and seeds, and nestles among grass or corn, laying from three to five glossy green eggs, two inches in length, an inch and a half in breadth. It is said to be polygamous, and the young follow their mother like those of a domestic fowl.

Otis Tetrao, Linn. Syst. Nat. i. 264.—Otis Tetrao, Lath. Ind. Ornith. ii. 659.—Otis Tetrao, Temm. Man. d'Ornith. ii. 507.—Otis Tetrao, Little Bustard, MacGillivray, Brit. Birds, iv.

GENUS LXXXVI. CURSORIUS. COURSER.

The species which constitute this genus are of small size and slender form, with the neck rather short, the head oblong, and little elevated in front. Bill somewhat shorter than the head, slender, tapering, nearly straight or a little arched, somewhat broader than high at the base, compressed toward the end; upper mandible with the dorsal line straight for two-thirds of its length, then arcuato-declinate, the ridge somewhat carinate, the edges sharp, the tip acute, without notch; lower mandible with the angle long and narrow, the dorsal line decurved, the edges sharp, the tip narrow, but rather blunt. Tongue slender, emarginate and papillate at the base, flattened above, with a medial groove, the tip thin, narrow, but obtuse. Nostrils subbasal, lateral, oblong, in the fore part of the rather short sinus. Eyes of moderate size. Aperture of ear rather large. Legs long, slender; tibia bare for a third, scutellate before, with two rows of scales behind; tarsus slender, compressed, anteriorly scutellate; hind toe wanting; anterior toes short, the fourth much longer than the second, all scutellate above, the middle and outer connected by a narrow basal membrane; claws small, slender, little arched, acute, that of the middle toe with a dilated inner edge. Plumage moderate, soft, blended; wings long, narrow, acute, the first and second quills about equal, the inner secondaries much elongated; tail short or moderate, slightly rounded or even, of twelve obtuse feathers.

The Coursers belong to the warmer regions of the Old Continent, inhabiting chiefly the sandy deserts. They run with extreme celerity, and have a rapid flight. Small as they are, they seem more allied in form to the Bustards than the Plovers. A very few individuals of a single species have been met with in England.

164. Cursorius isabellinus. Cream-coloured Courser.

Adult with the bill black, the feet yellowish; the plumage pale brownish-yellow, lighter on the lower parts; the fore part of the head reddish, the hind part grey, with a triangular black spot on the nape; two bands, a white and a black, from

the eye to the occiput; the primaries black. Young with the upper parts of a duller tint, with undulated angular transverse dusky lines.

Male, 10.., $6\frac{3}{4}$, 1, $1\frac{1}{12}$, $\frac{9}{12}$, $\frac{3}{12}$.

Said to inhabit various parts of Africa, and especially Abyssinia. Individuals have occurred in Italy, Spain, Switzerland, and Germany; but in the latter more northern countries it is considered an extremely rare straggler. In England not more than four specimens are recorded to have been obtained: the first in East Kent, in 1785; the second in North Wales, in 1793; the third in Yorkshire, in 1816; the fourth in Leicestershire, in 1827.

Cream-coloured or European Swiftfoot, or Plover.

Cursorius Europæus. Lath. Ind. Ornith. ii. 751.—Cursorius isabellinus, Temm. Man. d'Ornith. ii. 513.—Cursorius isabellinus, Cream-coloured Courser, MacGillivray, Brit. Birds, iv.

GENUS LXXXVII. GLAREOLA. PRATINCOLE.

The birds of this genus, all of small size, and remarkable for their very long and pointed wings, forked tail, and slender feet, have by some been considered as Swallows, by others as belonging to the Gallinaceous family, and by some again as allied to the Plovers. I think their true place is next to the Cursorii and Pluviales. Their bill is short, moderately stout, somewhat arcuate, wider than high at the base, compressed toward the end; upper mandible with the dorsal line straight at first, then arcuato-decurvate, the nasal sinus wide and feathered, the ridge narrow, the edges sharp and inflected toward the end, without notch, the tip rather acute; lower mandible with the angle of moderate width, the dorsal line slightly decurved, the edges sharp and inflected, the tip acute; the gape-line arched, and commencing beneath the eyes, so that the mouth is wide, and in no respect resembles that of the Plovers. Nostrils basal, lateral, oblong, oblique. Eyes large, lower eyelid bare. Aperture of ear rather large. Legs of moderate length, very slender; tibia bare for a short space; tarsus moderate, slender, reticulated; hind toe very small, a little elevated, lateral toes very short, the outer a little longer, the middle toe much ex-

ceeding the rest, and connected with the outer by a basal membrane; claws slender, slightly arched, compressed, acute, that of the middle toe very long, with the inner edge somewhat pectinate. Plumage moderate, soft, rather compact, the feathers ovate or elliptical; wings very long, narrow, taper-pointed, very similar to those of the Swallows, but with their cubital portion longer; the quills twenty-five; primaries very long, stiff, tapering, the first longest; inner secondaries moderate; tail rather long, forked, of twelve feathers.

The Pratincoles, of which only three species are known, inhabit Africa and the warmer regions of Asia. One species is also extensively distributed in the southern and eastern parts of Europe, and sometimes makes its way even to the most northern parts of Britain. They are said to run with great celerity, fly with extreme rapidity, feed on insects and aquatic worms, and reside in marshy places.

165. Glareola torquata. Collared Pratincole.

Tail deeply forked; wings very long, their tips, when closed, reaching almost to the end of the tail; upper parts greyish-brown, tail-coverts white; throat pale reddish-yellow, margined with two narrow bands, the inner white, the outer black; lower wing-coverts deep brownish-red. Young with the upper parts greyish-brown, the feathers edged with reddish-white; the throat greyish-white, margined with a line of dusky spots; lower parts grey; tail little forked.

Male, 10.., $7\frac{1}{4}$, $\frac{8}{12}$, $1\frac{2}{12}$, $\frac{9}{12}$, $\frac{5}{12}$.

Inhabits the margins of lakes and rivers in Asia and the eastern parts of Europe, appears occasionally in the western parts of the latter continent, and has been twice obtained in Britain. The first individual was killed near Liverpool, in 1804; the other by Mr Bullock, in Shetland, in 1812. The latter was observed to fly in the manner of swallows, but also to run on the ground with rapidity, and to enter shallow water, in pursuit of insects, of which its stomach was full.

Austrian Pratincole.

Hirundo Pratincola, Linn. Syst. Nat. i. 345.—Glareola Austriaca. Lath. Ind. Ornith. ii. 753.—Glareola torquata, Temm. Man. d'Ornith. ii. 500.—Glareola torquata, Collared Pratincole, MacGillivray, Brit. Birds, iv.

FAMILY XXXIV. PLUVIALINÆ. PLUVIALINE BIRDS, OR PLOVERS.

The species of which this family is composed have a manifest mutual resemblance, and are directly connected with the Otinæ on the one hand, and the Tringinæ on the other. They are generally of small size, many of them very diminutive; and have a moderately full, or somewhat slender body, of an ovate, more or less compressed form, rather short or moderate neck, and oblong or roundish head, which is always elevated and rounded in front, like that of the Pigeons. Bill generally about the length of the head, but varying greatly, straight or very slightly recurvate, slender, tapering, compressed, blunt; upper mandible with its outline straight and slightly declinate for half its length, then convex or bulging toward the end, the nasal groove extending about two-thirds of its length; lower mandible with the angle moderately long and narrow, the dorsal line ascending and a little convex. Both mandibles internally moderately concave. Mouth extremely narrow; tongue short or of moderate length, fleshy, narrow, emarginate and papillate at the base, flattish above, pointed; œsophagus narrow, without dilatation; proventriculus oblong; gizzard large, elliptical, compressed, its muscles very large and distinct, the epithelium dense, with prominent rugæ; intestine of moderate length and width; cœca rather long, subcylindrical. Trachea uniform, a little depressed, with a single pair of inferior laryngeal muscles. Eyes generally large, eyelids densely feathered. Nostrils subbasal, lateral, linear. Aperture of ear roundish and moderate. Legs long and slender; tibia bare below; tarsus long, or moderate, a little compressed, reticulated all round, or scutellate in front; toes small, rather short, the hind toe wanting or very small, the anterior toes spreading, scutellate, more or less webbed at the base; claws small,

arched, compressed, slender, blunted. Plumage close, soft, generally blended, on the upper parts imbricated; the feathers oblong, rounded; scapulars very long and narrow; wings long, narrow, pointed or moderately rounded, with twenty-five feathers; inner secondaries elongated, tapering; tail short, even or rounded, of twelve feathers.

Some species of this family occur in every part of the globe. They generally feed on insects, larvæ, worms, small crustacea, and mollusca; are gregarious and migratory, breeding in the colder regions; form their nest in a small cavity on the ground, and generally lay four extremely large pyriform spotted eggs. The young at first covered with long soft down, run about from the first. The Pluvialinæ run with great speed, have a strong direct flight, emit loud, shrill, or mellow cries, and frequent open places, seldom wading in the water. The males are larger than the females. The plumage is changed in autumn, and there is a partial moult in spring, so that the colours are, to a certain extent, different in summer. The young in their first plumage differ from the adult. In Britain ten species occur.

GENUS LXXXVIII. ŒDICNEMUS. THICK-KNEE.

Birds of moderate or rather small size, with the body ovate and rather full, the neck rather long, the head large, and rounded. Bill rather longer than the head, stout, straight, depressed at the base, compressed toward the end; upper mandible with the dorsal line straight to the middle, then slightly arched and declinate, the ridge prominent, the nasal sinus large, and filled by a bare membrane, the tip rather acute; lower mandible with the angle rather long and narrow, the dorsal line ascending, the tip rather acute; gapeline straight, commencing under the anterior angle of the eye. Nostrils linear, oblong, medial, direct. Eyes large. Aperture of ear large. Legs long, slender; tibia bare be-

low; tarsus reticulate with hexagonal scales; toes three, short, scutellate, with short basal webs; claws short, arched, convex, obtuse, that of the middle toe with its inner edge dilated. Plumage soft, moderate, blended; wings of moderate length, pointed; tail short, graduated or rounded.

These birds are commonly named Thick-knees; but as the joint from the enlargement of which they have obtained that name is not the knee, but the ankle, I cannot but consider the appellation incorrect. They are very nearly allied to the Plovers, in habits as well as in form, scarcely less so, I think, in both, to the Bustards, and especially in having the gape-line much farther extended than in the Plovers. The species, which are not numerous, belong to New Holland, Asia, Africa, and part of Europe. They frequent dry open pastures and deserts, feed on insects, worms, and reptiles, run with great speed, and have a strong flight. The nest is a hollow in the sand or earth; the eggs two, oval, and spotted. The young, at first covered with down, presently accompany their parents. One species is a summer visitant to some of the eastern parts of England.

166. Œdicnemus crepitans. Stone Thick-knee.

Bill shorter than the head, stout, pale-yellow at the base, black at the end; feet yellow, claws blackish-brown; head and upper parts pale reddish-yellow, streaked with umber-brown, and tinged with grey; cheeks and throat white; neck and fore part of breast light greyish-yellow, streaked with brown, the rest of the lower parts white, the sides with slender brown streaks; anterior edge of wing cream-coloured; secondary coverts tipped with white; quills black, the first two with a white band near the middle; tail feathers variegated, the outer three on each side reddish-white, all tipped with black except the two middle.

Male, 17, 29, $9\frac{1}{12}$, $1\frac{4}{12}$, $3\frac{1}{12}$, $1\frac{2}{12}$, $\frac{3}{12}$.

This bird is a regular summer visitant to some of the eastern counties of England, especially Norfolk, Suffolk, Sussex, and Yorkshire, arriving in the beginning of May and departing in September. It frequents open tracts, feeds on insects, worms, and reptiles, runs with great rapidity, is partially nocturnal, has a rapid flight, and emits a loud shrill cry. It forms no nest, but deposits on the ground, usually among stones, its two eggs, which are yellowish-brown, patch-

ed, spotted, and streaked with dark-brown and purplish-grey, two inches and two-twelfths in length, an inch and a half in breadth, and of an oval form.

Norfolk Plover. Stone Curlew. Thick-kneed Bustard.

Charadrius Œdicnemus, Linn. Syst. Nat. i. 255.—Otis Œdicnemus, Lath. Ind. Ornith. ii. 661.—Œdicnemus crepitans, Temm. Man. d'Ornith. ii. 521.—Œdicnemus crepitans, Stone Thick-knee, MacGillivray, Brit. Birds, iv.

GENUS LXXXIX. PLUVIALIS. PLOVER.

The Plovers form a genus of moderate extent, and of which three species occur in Britain. They are all of rather small size, with the body ovate, and rather full; the neck of moderate length; the head rather small, somewhat compressed, and much rounded above. Bill nearly as long as the head, straight, rather slender, compressed; upper mandible with the dorsal line straight, and slightly declinate for two-thirds, then bulging a little, or arcuate at the end, the nasal groove long and rather wide, the edges slightly inflected, the tip narrow, but rather obtuse; lower mandible with the angle rather long and narrow, the dorsal line ascending and slightly convex, the edges inflected, the tip narrow, but rather blunt; the gape-line straight. Mouth very narrow; palate with two longitudinal ridges, and anteriorly a double row of papillæ; tongue rather long, very narrow, subtrigonal, deeply channelled above, pointed; œsophagus narrow, without dilatation; proventriculus oblong; stomach a rather large muscular gizzard, of an elliptical or roundish compressed form, with two strong lateral muscles, radiated tendons, and dense, longitudinally rugous epithelium; intestine long and narrow; cœca small, cylindrical, and very narrow. Nostrils small, linear, pervious, subbasal, near the margin. Eyes large and full, both eyelids feathered. Aperture of ear large, roundish. Legs of moderate length, very slender; tibia long, bare for nearly a fourth; tarsus of ordinary length, anteriorly and laterally covered with numerous hexagonal scales; toes rather short, slender, three before, in one instance a rudimentary hind toe, the third and fourth connected at the base by a web, all margined and scutellate; claws rather short, compressed, slightly arched, slender, ob-

tuse. Plumage ordinary, close, rather blended; feathers oblong; wings long and pointed, of twenty-five quills; the primaries tapering, the first longest, the inner secondaries much elongated; tail straight, nearly even, of twelve feathers.

The species of this genus are very widely distributed, and one is common to both continents. They form large flocks after the breeding season, and generally betake themselves in cold weather to the shores of the sea. Their food consists of insects, worms, mollusca, and small crustacea. They run with celerity, have a rapid flight, and emit a loud shrill whistle. The nest is a slight hollow in the ground, the eggs always four, pyriform, extremely large, and spotted. One species is very common in Britain, another breeds there in small numbers, and a third is a winter visitant.

167. Pluvialis Squatarola. Grey Plover.

Bill rather stout, nearly as long as the head; a very diminutive hind toe. In winter, the upper parts blackish-grey, spotted with white; the cheeks, neck, breast, and sides greyish-white, streaked with greyish-brown; the axillar feathers greyish-black. In summer, the upper parts black, spotted with white; the forehead, a line over the eye, the abdomen, and legs, white. Young dusky-grey above, spotted with white and yellow, greyish-white beneath, the fore-neck and sides streaked with brownish-grey.

Male, 12, 25, $7\frac{3}{12}$, $1\frac{4}{12}$, $1\frac{2}{12}$, $\frac{4}{12}$. Female, $11\frac{1}{2}$, $23\frac{3}{4}$.

The Grey Plover, which is pretty generally distributed over the continent of Europe, and is plentiful in some parts of North America, seems to be with us merely an annual visitant, appearing in small flocks in autumn and spring, chiefly along the coast, where it frequents the muddy and sandy beaches, which it searches for worms, insects, and small marine animals. It breeds in the northern countries, placing a few blades of grass in a slight hollow, and laying four light greenish-yellow pyriform eggs, blotched and dotted with brown and pale purple.

Black-bellied Plover. Grey Sandpiper. Squatarola.

Tringa Squatarola and Helvetica, Linn. Syst. Nat. i. 250, 252.—Tringa Squatarola and Helvetica, Lath. Ind. Ornith. ii. 718, 729.—Vanellus melanogaster, Temm. Man. d'Ornith. ii. 547.—Pluvialis Squatarola, MacGillivray, Brit. Birds, iv.

168. Pluvialis aurea. Golden Plover.

Bill rather slender, nearly as long as the head. In winter the upper parts brownish-black, spotted with yellow, the cheeks, neck, and fore part of the breast, variegated with brown, the throat and abdomen white, as are the axillar feathers. In summer the upper parts black, spotted with bright yellow; the fore-neck and breast black; the forehead, a line over the eye, a band bordering the black of the lower parts, and the lower tail-coverts, white. Young when fledged brownish-black, spotted with bright yellow above, and in other respects scarcely different from the adult birds in their winter dress.

Male, $10\frac{3}{4}$, $22\frac{1}{4}$, $7\frac{1}{4}$, 1, $1\frac{8}{12}$, $1\frac{2}{12}$, $\frac{6}{12}$. Female, $10\frac{1}{2}$, 22.

Generally distributed over Britain in the winter season, when it frequents the open plains and ploughed fields, so long as the weather remains mild, but betakes itself to the sea-shore and its vicinity when there is frost. Toward the end of spring they pair and betake themselves to the heaths, where they breed. At this season they are abundant in most of the hilly parts of Scotland and in the Hebrides. The nest is a slight hollow in a dry place among the heath or moss, irregularly strewed with fragments of withered plants. The eggs, four in number, are very large, ovato-pyriform, two inches and a twelfth long, an inch and five-twelfths in breadth, pale greenish-yellow or cream-coloured, irregularly spotted, dotted and patched with dark brown, some light purple spots being interspersed, and the markings larger toward the broadest part. The young leave the nest presently after exclusion, and conceal themselves by lying flat on the ground. Their parents evince the greatest anxiety in their behalf, feigning lameness to entice the intruder away. When the young are able to fly, the plovers collect into flocks, but remain on the heaths and hill pastures until the commencement of winter. During continued frosts they search the sands and rocky shores of the sea at low water. Great numbers are killed, their flesh affording delicate eating, not much inferior to that of the woodcock.

Yellow Plover. Green Plover. Grey Plover. Black-breasted Plover. Whistling Plover.

Charadrius Pluvialis and apricarius, Linn. Syst. Nat. i. 254. —Charadrius Pluvialis and apricarius, Lath. Ind. Ornith. ii. 740.—Charadrius Pluvialis, Temm. Man. d'Ornith. ii. 535.—Pluvialis aurea, Golden Plover, MacGillivray, Brit. Birds, iv.

169. Pluvialis Morinellus. Dotterel Plover.

Bill slender, considerably shorter than the head; inner secondaries extremely elongated. In winter, the top of the head dark brown, laterally margined with reddish-white; upper parts greenish-brown, the feathers edged with pale red; forehead and cheeks whitish, streaked with dusky; fore neck brownish-grey, a transverse band of white at its lower part; breast brownish-red. In summer, the top of the head brownish-black, laterally margined with pure white, of which colour are the forehead and cheeks; upper parts greyish-brown, the feathers edged with red; fore-neck brownish-grey, a double transverse band, black and white, at its lower part; breast bright red, part of abdomen black. Young with the tints more grey, the upper part of the head reddish, with longitudinal dusky spots; the tail tipped with pale red.

Male, 10, 19, $6\frac{1}{4}$, $\frac{9}{12}$, $1\frac{5}{12}$, $\frac{1}{1}\frac{0}{2}$, $\frac{4}{12}$. Female, $9\frac{1}{2}$, $18\frac{1}{2}$.

The Dotterel makes its appearance in various parts of England and Scotland, when on its way northward in April and May, and on its return in September and October. Many remain to breed, settling especially in the mountainous districts of Cumberland and Westmoreland, and in some parts of the Grampians. I have seen a very large flock, in September, near the head of the Don, in Aberdeenshire. Dr Heysham found it breeding on the summits of many of the mountains of Cumberland. It makes no nest, but deposits its eggs, generally three, seldom four in number, in a small cavity in a dry place, usually near a stone or fragment of rock. The eggs are brownish-yellow, spotted with brownish-black, an inch and two-thirds in length, an inch and two-twelfths in breadth. After the breeding season, the Dotterels collect into flocks, and betake themselves to the lower parts of the country. They are generally easily shot, being unsuspicious of danger, and allowing a person to walk within a short distance, when they stretch up their wings and run before him. This apparent stupidity has obtained for them their vernacular name. By the end of October they have all disappeared.

Charadrius Morinellus, Linn. Syst. Nat. i. 254.—Charadrius Morinellus, Lath. Ind. Ornith. ii. 746.—Charadrius Morinellus, Temm. Man. d'Ornith. ii. 537.—Pluvialis Morinellus, Dotterel Plover, MacGillivray, Brit. Birds, iv.

GENUS XC. CHARADRIUS. SAND-PLOVER.

The Sand-Plovers are all of small size, and generally less variegated than the Plovers, from which they differ chiefly in having the wings and tail more elongated, the neck shorter, and the head larger. The bill is generally much shorter than the head, straight, rather slender, as broad as high, slightly compressed toward the end; upper mandible with the dorsal line straight and slightly declinate for half its length, then bulging or arcuate, the nasal groove about half its length, the edges slightly inflected toward the end, the tip rather obtuse; lower mandible with the angle moderate, the dorsal line ascending and a little convex, the sides concave at the base, the edges inflected, the tip narrow, but rather blunt; the gape-line straight. Mouth extremely narrow; palate with two longitudinal ridges, and anteriorly a few papillæ; tongue very narrow, deeply channelled above, with the tip narrow and thin-edged; œsophagus narrow; proventriculus oblong; stomach a roundish compressed gizzard, with thick lateral muscles, radiated tendons, and dense longitudinally rugous epithelium; intestine of moderate length and width; cœca rather short, narrow, cylindrical. Nostrils small, linear, pervious, subbasal. Eyes large and full, eyelids feathered. Aperture of ear rather large. Legs of moderate length, slender; tibia bare for about a fourth; tarsus of ordinary length, covered with hexagonal scales; toes three, rather short, slender, with numerous scutella, marginate, the outer considerably longer than the inner, and connected with the third by a basal web; claws rather short, compressed, slightly arched, slender, rather acute. Plumage close, rather blended; feathers oblong or ovate; wings very long, narrow, pointed, of twenty-five quills; primaries tapering, the first longest, the rest rapidly diminishing; outer secondaries short, obliquely rounded, inner tapering and extremely elongated; tail rather broad, of moderate length or long, rounded or graduated, of twelve feathers, of which the two middle are somewhat pointed.

The Sand-Plovers, as their name implies, chiefly frequent the sandy shores of the sea, lakes, and rivers; but some oc-

cur also in the interior, for the most part on dry barren grounds. Their nests are slight hollows in the sand; their eggs always four, pyriform, extremely large, light-coloured, and dotted or clouded with dusky tints. The young, covered with down, run presently after birth, and conceal themselves by crouching. All the species are very active and lively, run with great celerity, have a very rapid flight, and emit a clear, mellow, somewhat modulated cry. One species is common and resident in Britain, another occurs on the shores of the eastern counties of England, and a third has been met with only in one or two instances.

170. CHARADRIUS HIATICULA. RINGED SAND-PLOVER.

Length about eight inches, bill seven-twelfths along the ridge, half as long as the head, wings and tail of equal length. Adult with the upper parts greyish-brown; the forehead with two bands, a white and a black; a dark brown band under the eye; a ring of white including the throat, succeeded by a broader ring of brownish-black; the bill orange at the base, black at the end; the feet orange, the claws black. Young when fledged with the bill entirely black, the feet dull greenish-ochre; the colours of the plumage distributed as in the adult; but the feathers of the upper parts margined with light brownish-red fading to greyish-white; the dusky bands brownish-grey, that on the forehead wanting; the broad band on the neck meeting but partially in front, a large white space being left below.

Male, $8\frac{1}{2}$, $17\frac{1}{2}$, $5\frac{4}{12}$, $\frac{7}{12}$, 1, $8\frac{1}{2}$, $\frac{3}{12}$. Female, $8\frac{1}{2}$, 17.

This species is generally dispersed along the shores, and permanently resident. It collects in autumn into large flocks, which frequent the sands of bays and estuaries, often mingling with sandpipers. Its food consists of insects, worms, small testaceous and crustaceous animals. It runs with great celerity, has a rapid flight, and emits a mellow whistling cry. Toward the beginning of April the flocks break up into smaller parties, and the individuals pair. The nest is a hollow formed in the sand, generally not far from high-water mark, but sometimes in the sandy pastures, and even far inland. The eggs, always four, are very large, pyriform, an inch and five-twelfths in length, greyish-yellow, sparsely covered all over with dots, small spots, and angular lines of brownish-black and purplish-grey. All the birds of this fa-

mily try to decoy intruders by feigning lameness, but this species more conspicuously than most.

Ring Dotterel. Ring Plover. Stone Plover. Sand Lark. Sandy Laverock. Sandy Loo. Dulwilly.

Charadrius Hiaticula, Linn. Syst. Nat. i. 253.—Charadrius Hiaticula, Lath. Ind. Ornith. ii. 743.—Charadrius Hiaticula, Temm. Man. d'Ornith. ii. 539.—Charadrius Hiaticula, Ringed Sand-Plover, MacGillivray, Brit. Birds, iv.

171. Charadrius Cantianus. Kentish Sand-Plover.

Length nearly seven inches, bill seven-twelfths, more than half the length of the head, wings shorter than the tail. Adult with the upper parts light greyish-brown; the forehead with two bands, a white and a black, the hind part of the head light brownish-red; the loral space and a band behind the eye black; the throat and a band crossing the hind-neck white; a large patch of black on each side of the lower part of the neck; the bill black, the lower mandible flesh-coloured at the base; the feet dusky, the claws black. Young without black on the head, the bands on both its sides and the patches on the neck brown, the feathers of the upper parts margined with whitish.

Male, $6\frac{9}{12}$, . ., $4\frac{1}{2}$, $\frac{7}{12}$, $\frac{10}{12}$, $\frac{8}{12}$, $\frac{2}{12}$. Female, $6\frac{8}{12}$.

The Kentish Plover, so named by Latham, who first described it from specimens shot near Sandwich in Kent, has been found along the sandy coasts of several of the southern and eastern counties of England, but not farther north than Norfolk. It is very extensively distributed on the Continent, and is found in India and its islands, so that the name by which it is known is very inappropriate, although well enough chosen at the time of its discovery. Its habits are similar to those of the Ringed Sand-Plover. The eggs, four in number, are an inch and a fourth in length, eleven-twelfths in breadth, of a yellowish stone colour, spotted and streaked with black.

Charadrius Cantianus, Lath. Ind. Ornith. Suppl. ii. 316.—Charadrius Cantianus, Temm. Man. d'Ornith. ii. 544.—Charadrius Cantianus, Kentish Sand-Piper, MacGillivray, Brit. Birds, iv.

172. Charadrius minor. Little Ringed Sand-Plover.

Length about six inches, bill five-twelfths and a half, wings shorter than the tail. Adult with the bill black, the feet flesh-coloured; the upper parts light brownish-grey; the

forehead black, with a white band, the hind-head grey; a black band from the bill under the eye to the ear-coverts; a ring of white including the throat, succeeded by a broad ring of black; lower parts of the body white. Young without the black collar and bands on the head, in other respects like the adult, but tinged with brown above, and having all the feathers margined with a paler tint.

Male, $6\frac{2}{12}$, . ., $4\frac{4}{12}$, $\frac{5}{12}$ and $\frac{1}{2}$, 1, $\frac{8}{12}$, $\frac{3}{12}$. Female, 6.

A young individual of this species, killed at Shoreham in Sussex, is in the possession of Mr H. Doubleday of Epping. The species is not uncommon on the Continent, and appears to be as extensively distributed as the rest. It is said to be less frequently seen on the sea-coast than on the banks of rivers, where it breeds, laying on the sand its four eggs, which are somewhat more than an inch long, pale greyish-yellow, dotted with blackish-brown and bluish-grey.

Charadrius minor, Temm. Man. d'Ornith. ii. 542.—Charadrius minor, Little Sand-Plover, MacGillivray, Brit. Birds, iv.

GENUS XCI. VANELLUS. LAPWING.

The Lapwings differ from the Plovers chiefly in having a small hind toe, scutella instead of scales on the front of the tarsi, and in the form of the wing, which, in place of being narrow and acuminate, is broad toward the end, and rounded. They vary in size from that of a Ringed Sand-Plover to that of a Whimbrel. The body is moderately full; the neck of ordinary length; the head rather small, compressed, much rounded above. Bill rather short, straight, slender, compressed; upper mandible with the dorsal line straight and slightly declinate for two-thirds of its length, then convexo-declinate, the edges soft and slightly inflected, the nasal groove long, the tip rather obtuse; lower mandible with the angle rather long and narrow, the dorsal line ascending and slightly convex, the sides concave at the base, the edges inflected, the tip narrow, but blunt; the gape-line straight. Mouth extremely narrow; palate with two longitudinal ridges, anteriorly with a papillate ridge; tongue narrow, channelled above, trigonal, tapering; œsophagus narrow; proventriculus oblong; stomach a roundish, large, very muscular gizzard, with thick and very firm lateral muscles, radiated tendons, and dense, longitudinally rugous epi-

thelium ; intestine of moderate length and width ; cœca moderate, cylindrical. Nostrils small, linear, pervious, subbasal. Eyes large and full, eyelids densely feathered. Aperture of ear large, roundish. Legs of moderate length or very long, slender ; tibia bare for about a fourth ; tarsus laterally reticulated, anteriorly scutellate ; toes short, slender, four, the hind toe extremely small, the second a little shorter than the fourth, which is connected with the third by a basal web ; all marginate, and covered above with numerous narrow scutella ; claws short, arched, compressed, slender, obtuse. Plumage ordinary, rather blended ; wings long, of moderate breadth, rounded, of twenty-five quills ; the third primary longest, the first and seventh nearly equal ; outer secondaries short, inner tapering and very elongated ; tail broadish, rounded, or even, the middle feathers not acuminate.

The Lapwings are most closely allied to the Plovers, from which they have been separated only by persons who have considered the insignificant character of the presence of a small hind toe as of more importance than the general agreement of the skeleton, bill, and digestive organs. They feed on insects, crustacea, mollusca, worms, and sometimes seeds ; run with great celerity, fly with rapidity, and emit a mellow, sometimes modulated, cry. The nest is a slight hollow in the ground ; the eggs four, pyriform, extremely large, and spotted. The young, covered with down, run immediately after birth, and conceal themselves by crouching. Only one species occurs in Britain.

173. Vanellus cristatus. Green Crested Lapwing.

A recurved occipital crest of linear feathers ; upper parts green, lower white, fore part of neck black, tail white, with a broad black band. The female differs only in having the crest less elongated, the head and fore-neck somewhat lighter, and the hind-neck greenish-grey. Albino individuals, of a pure white or cream colour, are extremely rare. The young when fledged have the colours nearly the same as in the adult, but most of the feathers on the upper parts are terminally margined with light red.

Male, 13, 29, $9\frac{8}{12}$, 1, $1\frac{1}{12}$, $1\frac{2}{12}$, $\frac{3}{12}$. Female, $12\frac{1}{2}$, 28.

The Lapwing, generally dispersed, and familiarly known, frequents in summer wet heaths, moors, and marshy pastures or meadows. It nestles in April, depositing its four eggs in a hollow, slightly strewn with some straws. They are pyriform, very large, yet much smaller than those of the Golden Plover, an inch and ten-twelfths in length, an inch and two or three twelfths in breadth, pale brownish-yellow, greenish-grey, or olivaceous, blotched, spotted, and dotted with brownish-black. Being considered delicate food, they are collected in vast numbers, and exposed in the London markets. During the breeding season, the old birds shew great anxiety and considerable boldness, flying up to meet an intruder, plunging and wheeling around him, and uttering incessantly their peevish wailing cry, which somewhat resembles the syllables pee-wee, or pee-o-wee, whence the common name of Pewit, and in Scotland Peese-weep. The young conceal themselves by crouching until fledged. After the breeding season, they leave the marshy grounds, and betake themselves to the fields and pastures. They feed on insects and worms, run with great speed, and have a quick flight, differing from that of the Plovers in the flapping of the wings being slower and heavier. Although they never, at any season, fairly take up their residence on the coast, they often in winter frequent the sands exposed by the ebb. During the breeding season, even when not disturbed, they may be seen flying about, now high, now low, hovering, gliding, and wheeling, with continuous noise of their wings, or producing an undulated loud hum by flapping them strongly, and at the same time emitting various modifications of their usual cry. Their flesh, although good, is inferior to that of the Plovers.

Pewit. Peese-weep. Teuchit. Green Plover.

Tringa Vanellus, Linn. Syst. Nat. i. 248.—Tringa Vanellus, Lath. Ind. Ornith. ii. 726.—Vanellus cristatus, Temm. Man. d'Ornith. ii. 550.—Vanellus cristatus, Green Crested Lapwing, MacGillivray, Brit. Birds, iv.

GENUS XCII. STREPSILAS. TURNSTONE.

Only two species of this genus are known, one from the western coast of North America, the other dispersed over the shores of the greater part of the globe. They are small birds, having the body ovate and rather full; the neck rather short; the head oblong, and rounded in front. Bill a little shorter than the head, slightly bent upwards beyond the

middle, compressed until towards the end, when it becomes depressed; upper mandible with its dorsal line slightly concave, the ridge somewhat flattened, the edges rather sharp and slightly deflected, the tip depressed and blunt; lower mandible with the angle narrow, the dorsal line ascending and slightly convex, the sides grooved at the base, convex toward the end, the edges a little involute, the tip depressed and blunt; the nasal groove half the length of the bill; the gape-line very slightly recurvate. Eyes of moderate size. Nostrils linear, pervious. Aperture of ear moderate. Legs slender, of moderate length; tibia bare for a short space; tarsus rather short, somewhat compressed, with numerous anterior scutella; toes four, the first very small, the anterior of moderate length, slightly webbed at the base, the second a little shorter than the fourth; claws short, compressed, arched, obtuse; that of the hind toe more curved and acute. Plumage rather compact above, blended beneath; scapulars elongated and narrow; wings long, narrow, pointed, of twenty-six quills; primaries tapering, the first longest, the rest rapidly decreasing; inner secondaries greatly elongated and tapering; tail rather short, a little rounded, of twelve rather broad rounded feathers.

This genus is very intimately allied to Ostralegus, agreeing with it in every particular, excepting the form of the bill, especially at its tip.

174. Strepsilas Interpres. Collared Turnstone.

Adult in winter with the middle of the back and the lower parts white, the fore-neck black; the upper parts blackish-brown. In summer the upper parts variegated with black and brownish-red. The bill black, the iris brown, the feet reddish-orange, the claws black; the primaries and coverts brownish-black, the secondaries more brown; all in their lower part, the outer secondaries at their extremities, and the shafts of the primaries, white, of which colour also are the tips of the secondary coverts, and the inner secondaries, together with some of the smaller wing-coverts; the tail white at the base, brownish-black toward the end, edged externally with light brown, the outer web of the outer, and the tips of all, excepting the two middle feathers, white.

Male, 9, $\frac{10}{12}$, $18\frac{10}{12}$, $\frac{11}{12}$, $6\frac{4}{12}$, $1\frac{1}{12}$, $\frac{10}{12}$, $\frac{3}{12}$. Female, $9\frac{1}{2}$, 18.

The Turnstones appear on our coasts in the end of October, and remain until the beginning of May, or somewhat later. They frequent the rocky parts and gravelly places more than the sands, keeping in flocks, and feeding on small mollusca, crustacea, and worms. They also sometimes search the shores beyond tide-mark for coleopterous insects. They run with great celerity, occasionally utter a mellow note, and sometimes associate with Ringed Sand-plovers and Oyster-catchers, although, when flying, they generally keep apart. Their flight is rapid, performed by regularly timed beats, often direct, but frequently in curves. Their flesh is not so delicate as that of the Plovers, but rather resembles that of the Oyster-catcher.

Tringa Interpres and Morinella, Linn. Syst. Nat. i. 248, 249.—Tringa Interpres and Morinella, Lath. Ind. Ornith. ii. 738.—Strepsilas collaris, Temm. Man. d'Ornith, ii. 553.—Strepsilas Interpres, Collared Turnstone, MacGillivray, Brit. Birds, iv.

GENUS XCIII. OSTRALEGUS. OYSTER-CATCHER.

The species of this genus, four or five in number, are nearly equal in size, and although much larger, greatly resemble the Turnstone in form as well as habits. The body is ovate and rather full; the neck rather long and stout; the head rather small, oblong, with its upper part rounded. Bill long, slightly bent upwards beyond the middle, pentagonal and about as high as broad at the base, where it is covered by a soft skin, which extends nearly to the middle, beyond this extremely compressed, and when viewed vertically, gradually tapering to a point, but when seen laterally, contracting a little from the base to before the nostrils, then enlarging before the nasal groove, and gradually sloping, but not forming a point, the tips being more or less abrupt. This attenuation of the mandibles is not their original form, but is produced by their being rubbed against hard substances. Mouth narrow; palate with six series of reversed conical papillæ; upper mandible within flat, the edges projecting but slightly; tongue very short, fleshy, sagittate and papillate at the base, flat above, pointed; œsophagus narrow, dilated a little about the middle; proventriculus oblong:

stomach large, oblong, with radiated tendons, and distinct strong lateral muscles, the epithelium dense, rather thin, with prominent rugæ ; intestine rather slender, of moderate length, with two rather long cylindrical cœca ; the cloaca globular or elliptical. Nostrils linear, subbasal, direct. Eyes of moderate size, eyelids feathered. Aperture of ear transversely oblong, very small. Legs long and stout ; tibia bare for about a third ; tarsus compressed, covered with hexagonal scales, the anterior larger ; toes three, spreading, short, depressed, broadly margined, scutellate ; the inner shortest, the outer and middle with the margins dilated and united at the base, so as to form a short web, the middle and inner with a much smaller web ; claws very small, very slightly arched, narrow, obtuse. Plumage soft, blended, somewhat distinct and compact on the back : the feathers ovate, or lanceolate ; wings long, acute, with thirty quills ; primaries with very strong shafts, the first longest ; outer secondaries short, obliquely rounded, inner tapering and very elongated ; tail rather short, nearly even, of twelve broad rounded feathers.

The bill in all the species of this genus is of an attenuated wedge-like form at the end, whereas in the young which have not used it, the tip is not compressed, and the upper mandible is a little longer than the lower. The species are few, and greatly resemble each other, not only in form, but also in size and colouring. The bill is always red, and the plumage black and white, or of the former colour alone. One or other of the species is found in almost every known country. They reside on the shores, and feed on mollusca and crustacea. Ostralegus, although translated Oyster-catcher, ought to be Englished by Shell-gatherer ; nor is there the slightest reason to believe that these birds eat oysters. A single species occurs in Britain.

175. Ostralegus Hæmatopus. Pied Oyster-catcher.

Bill vermilion, feet pale purplish-red ; head, neck, fore part of back, wings, and terminal half of tail black ; the rest white ; generally on each side of the neck an obscure white mark behind the ears, and in some individuals a white band across the neck, while in others there are no white marks on

that part. The young are at first covered with down, of a greyish-white mottled with brown. When fledged, they have the bill pointed, the dark parts chocolate brown, the feathers slightly margined with yellowish-red; the breast, belly, greater part of the back, half of the tail and its coverts, white.

Male, 17, 35, $10\frac{1}{2}$, $3\frac{1}{4}$, 2, $1\frac{5}{12}$, $\frac{3}{12}$. Female 18, 36.

The Oyster-catcher occurs on all our coasts, on many parts of which it is abundant. After the breeding season it forms flocks, which are frequently very numerous. At this period they are met with chiefly on low rocky shores, or at the mouths of rivers. Their food consists chiefly of patellæ, balani, small bivalve shells, young crabs, and other marine animals. They often repose on extensive sands, as well as rocky headlands. Occasionally they wade in the water, but in general seek their food in exposed parts. They run with great celerity, have a strong and rapid flight, and emit a very loud shrill cry, which on certain occasions is modulated into several notes. In April the flocks break up, and the individuals disperse in pairs, some ascending the rivers, but by far the greater number breeding on the shores of the sea, in unfrequented places. The nest is a hollow made among the gravel or pebbles; sometimes however in rocky places some fragments of plants are placed in it. The eggs, generally three, sometimes four, are oval, two inches long, an inch and seven-twelfths in breadth, pale greyish-yellow, marked all over with dots, spots, and blotches of blackish-brown and umber, with some irregular linear markings of the same. The young soon leave the nest, but skulk among the rocks or herbage nearly until able to fly. The old birds evince much anxiety for their eggs and young, fly about the intruder, but, at a distance, feign lameness, and are extremely vociferous.

Sea Pie or Piet. Pianet. Choldrick.

Hæmatopus Ostralegus, Linn. Syst. Nat. i. 257.—Hæmatopus Ostralegus, Lath. Ind. Ornith. ii. 752.—Hæmatopus Ostralegus, Temm. Man. d'Ornith. ii. 531.—Ostralegus Hæmatopus, Pied Oyster-catcher, MacGillivray, Brit. Birds, iv.

We have now passed in review all the British Runners, and have seen that, in searching for food, they are guided entirely by sight, their eyes being large, in some remarkably so, they being in a great measure nocturnal. Some

of them, long as their legs are, never enter the water: the Bustards. Others with moderate legs, run chiefly on dry ground, but wade freely on occasion: the Plovers. Lastly, some reside solely on the sea-shore, and think as little of wading as of walking: the Turnstone and Oyster-catcher. They all pick up their food from the surface, and in search of it suddenly stand, look intently on the ground, and starting forward secure the object, or sometimes pursue it even on wing. But we now come to a tribe of birds which less frequently discover their prey by sight, they having the habit of thrusting their long bills into the sand or mud, and thus finding it. These birds may therefore be very aptly named Probers. In structure they differ little from the Runners; their digestive organs are very similar, and they might perhaps be included in the same order; but as they are numerous, and differ in their habits, they being all in some degree not only frequenters of watery places but also waders, I have thought it as well to consider them as forming a separate group.

ORDER XIV. TENTATRICES. PROBERS.

Intimately connected with the Pluvialínæ of the order of Runners, and with the Rallinæ and Tantalinæ of the orders of Skulkers and Stalkers, the Tentatrices, like most very natural groups that have obvious affinities, are not very easily defined. They are generally of small or moderate size, none being much larger than our common Curlew, and many not exceeding a Pipit. Their general characters seem to be the following: The body is ovate and compact; the neck long or moderate; the head small, ovate, compressed, and rounded above. Bill always longer than the head, very slender, somewhat cylin-

drical, generally flexible and elastic. Tongue slender, sagittate and papillate at the base, triangular, tapering to a point; on the roof of the mouth two rows of papillæ directed backwards; œsophagus narrow; proventriculus oblong or bulbiform; stomach oblong, elliptical or roundish, always with strong lateral muscles, large tendinous spaces, and dense, hard, longitudinally rugous epithelium; intestine of moderate length, rather narrow; cœca rather long, cylindrical or oblong; cloaca oblong. Nostrils linear, subbasal, direct. Eyes small. Aperture of ear moderate. Legs long or moderate, slender; tibia bare to a great extent, but in a few instances feathered to the joint; tarsus slender, generally scutellate; toes of moderate length, slender, the anterior webbed at the base, the hind toe very small and elevated, sometimes wanting; claws small, compressed, arched, rather acute. Plumage generally soft and blended, on the upper parts somewhat compact; the feathers oblong or ovate, with a rather large downy plumule; wings long, of moderate breadth, acute; the first quill generally longest; some of the inner secondaries much elongated, narrow, and tapering; tail short or moderate, of twelve or more feathers, and varying in form.

Birds of this order occur in all countries, and in Britain are numerous. They frequent marshes, the margins of lakes and rivers, and the shores of the sea. Their food consists of worms, testaceous mollusca, and insects, along with which a quantity of sand is swallowed, their stomach being a true gizzard. They generally run with great speed, have a rapid flight, emit shrill cries, wade in the water, and procure their food by probing the mud or sand. Most of them are extremely shy and vigilant. They nestle on the ground, laying four pyriform spotted

eggs, having the small ends placed together. The young, densely clothed with down, run about from the first. The old birds evince much anxiety for their eggs and young, and feign lameness to entice intruders. The males are smaller than the females. The plumage is renewed in autumn and spring, and is differently coloured at different seasons. This order may be divided into three groups or families, of which the characters, however, are not very well defined. These groups are the TRINGINÆ, TOTANINÆ, and SCOLOPACINÆ, which will be briefly characterised.

FAMILY XXXV. TRINGINÆ. TRINGINE BIRDS, OR SANDPIPERS.

Body ovate, compact; neck moderate or long; head small, compressed, rounded above. Bill long, straight, or sometimes arcuate, slender, cylindrical toward the end, obtuse. Mouth extremely narrow; tongue slender, trigonal, grooved above, tapering, pointed; œsophagus narrow; proventriculus oblong; stomach elliptical or roundish, with very strong lateral muscles, radiated tendons, and thin, dense, longitudinally rugous epithelium; intestine long, rather slender; cœca moderate, slender, cylindrical, or oblong; cloaca oblong. Trachea with a single pair of inferior laryngeal muscles. Nostrils linear, small, pervious, basal. Eyes small. Aperture of ear rather large, roundish. Legs of moderate length or long, slender; tibia bare for a fourth or a third of its length; tarsus slender, scutellate; toes four, the hind toe very small and elevated; or three only, of moderate length, more or less webbed at the base; claws small, arched, compressed, obtuse. Plumage moderately full, blended, on the upper parts compact; wings very long, pointed, with the

first quill longest, one of the inner secondaries nearly as long when the wing is closed; tail short, of twelve feathers.

The Tringinæ are maritime and gregarious in winter, active and lively, run with great speed, and have a rapid flight. They obtain their food chiefly by probing, but they also pick up substances from the surface, and that more frequently than the birds of the next two families. In summer they retire northward, and go inland to breed, forming a slight nest on the ground, and laying four pyriform, spotted eggs. They have not the vibratory motion of the Totaninæ, nor conceal themselves by skulking, like the Scolopacinæ. Sixteen species occur in Britain, many of them very common, others mere stragglers.

GENUS XCIV. CALIDRIS. SANDERLING.

This genus is composed of a single species, which is very widely distributed on both continents. It might perhaps be referred to the next genus, from which it differs chiefly in having the bill shorter, and the feet destitute of hind toe, the presence or absence of which, however, seems of very little importance in this and the preceding orders. It is a small bird, having the body ovate, compact; the neck rather short; the head rather small, compressed, anteriorly convex. Bill of the length of the head, straight, slender, soft, and somewhat flexible; upper mandible with the dorsal line straight, the ridge narrow, the tip a little enlarged and obtuse, the nasal groove extending nearly to the end; the lower mandible with the angle very long and narrow, the sides grooved, the tip a little enlarged and obtuse. Mouth extremely narrow; tongue very long, slender, trigonal, channelled above, pointed; œsophagus narrow; proventriculus small; gizzard large and muscular, its cuticular lining rugous; intestine long; cœca moderate, cylindrical. Nostrils small, linear, pervious, basal. Eyes small, eyelids feathered. Aperture of ear rather large, roundish. Feet rather short, very slender; tibia bare for a fourth of its length; tarsus with numerous anterior scutella; toes small, first wanting,

second a little shorter than fourth, all marginate and scutellate; claws small, curved, compressed, obtuse. Wings very long and pointed, of twenty-five quills; primaries tapering, the first longest; one of the inner secondaries not much shorter when the wing is closed; tail short, of twelve narrowed feathers, and somewhat doubly emarginate.

176. Calidris arenaria. Sanderling.

This bird varies so much in colour that scarcely two individuals can be found precisely alike. In winter the bill is black, the iris dusky, the feet greenish-black; the upper part of the head, hind part and sides of the neck, and the back, pale grey, each feather with a dark medial streak; the forehead, cheeks, fore part of neck, and all the lower parts pure white; the primary quills and coverts greyish-black, secondary quills paler, inner secondaries light grey, primary and secondary coverts tipped with white; all the quills white at the base, that colour extending from the first primary to the tenth secondary, which is entirely white; tail-feathers grey, margined with white. In summer the upper parts light red, spotted with black; cheeks, neck, fore part of breast, and sides, greyish-red, streaked with black; the rest of the lower parts white. The young have the upper parts black, variegated with yellow and white, the lower white.

Male, $7\frac{3}{4}$, 16, $5\frac{2}{12}$, 1, $\frac{11}{12}$, $\frac{8}{12}$, $\frac{1}{12}$. Female, 8, 17.

The Sanderlings appear on our northern coasts in the beginning of September, gradually increase, collect into large bands, and frequent the sandy shores and muddy estuaries, often mingling with Dunlins and other small species. In winter they are dispersed over all our shores. They run with great celerity, fly with rapidity, often inclining to either side; search the shores, usually along the water's edge, for small mollusca and worms; become extremely fat in the end of autumn, and afford delicate eating. In the end of spring they betake themselves to the arctic countries, where they breed; and, although individuals may be seen on various parts of the coast in summer, it does not appear that any nestle with us.

Sand Lark. Curwillet. Towilly. Ox-bird.

Tringa arenaria, Linn. Syst. Nat. i. 255.—Charadrius Calidris, Lath. Ind. Ornith. ii. 741.—Calidris arenaria, Temm. Man. d'Ornith. ii. 524.—Calidris arenaria, Sanderling, MacGillivray, Brit. Birds, iv.

GENUS XCV. TRINGA. SANDPIPER.

The species of this genus are of small size, the largest not exceeding the Golden Plover. They have the body ovate and compact; the neck of moderate length; the head rather small, compressed, anteriorly convex. Bill not much longer than the head, nearly straight, slender, soft, and somewhat flexible; upper mandible with the dorsal line straight, the ridge narrow, but flattened toward the end, the tip slightly enlarged, obtuse, and a little exceeding that of the lower, the nasal groove extending nearly to the end, and filled by a concave bare membrane; lower mandible with the angle very long and narrow, the sides grooved, the tip a little enlarged and obtuse. Mouth extremely narrow; tongue very long, slender, trigonal, channelled above, pointed; upper mandible internally concave, with a groove on each side, and a medial double row of reversed pointed papillæ; œsophagus narrow, without dilatation; proventriculus oblong; gizzard large, with very strong and firm lateral muscles, radiated tendons, and dense rugous thin epithelium; intestine long, and of moderate width; cœca moderate, cylindrical. Nostrils small, linear, pervious, basal, close to the margin. Eyes rather small, eyelids densely feathered. Aperture of ear rather large, roundish. Legs of moderate length, very slender; tibia long, bare for a fourth; tarsus with numerous narrow scutella; toes four, small, scutellate; first diminutive and elevated; second a little shorter than the third, which is connected with the fourth by a basal web; claws small, curved, compressed, obtuse. Plumage moderately full, soft, rather blended; wings very long, pointed, of twenty-five quills; primaries tapering, first longest; inner secondaries very elongated and tapering; tail short, generally doubly emarginate, of twelve narrowed feathers.

The Sandpipers inhabit the sandy and muddy coasts of the sea, estuaries, and rivers, in autumn and winter, often collecting into large flocks. In summer, they are dispersed over the moors and marshy districts of the northern countries, where they breed, forming a shallow nest on the ground,

and depositing four pyriform spotted eggs. The food, obtained by probing, consists of insects, worms, and small testaceous mollusca. The winter plumage differs in colour from that of the breeding season. The males are considerably smaller than the females.

177. Tringa Canutus. Ash-coloured Sandpiper.

Bill straight, a little longer than the head, its tip considerably dilated; tail even; tarsus an inch and two-twelfths long. In winter, the plumage ash-grey above, white beneath, the neck and sides streaked with dusky. In summer the back glossy black, variegated with yellowish-red, the fore neck and breast yellowish-red. Young grey above, each feather on the back with a double marginal band of black and white. Bill of adult greyish-black, its basal margins reddish; feet greyish-blue, the tarsal joint and soles green, claws black.

Male, $10\frac{1}{4}$, 20, $6\frac{3}{12}$, $1\frac{2}{12}$, $1\frac{2}{12}$, $\frac{12}{12}$, $\frac{3}{12}$. Female, $10\frac{10}{12}$, 22.

This species arrives from the north in the beginning of September, and returns in the end of April or beginning of May. It occurs in flocks on all our shores, chiefly on sands and the margins of estuaries. It breeds in the northern regions of both continents, living in summer in the marshes. Its food consists of worms, crustacea, mollusca, and insects.

Red-breasted Sandpiper. Red Sandpiper. Knot.

Tringa Canutus, and Islandica, Linn. Syst. Nat. i. 281.—Tringa Canutus, Islandica, cinerea, grisea, and nævia, Lath. Ind. Ornith. ii. 737, 738.—Tringa cinerea, Temm. Man. d'Ornith. ii. 627.—Tringa Canutus, Ash-coloured Sandpiper, MacGillivray, Brit. Birds, iv.

178. Tringa maritima. Purple Sandpiper.

Bill a little longer than the head, and slightly decurved at the end; tail with the middle feathers considerably longer, the three lateral nearly equal; tarsus ten-twelfths long, shorter than the middle claw; bill dusky, orange at the base, and on part of the ridge; feet ochre-yellow; scarcely any bare space on the tibia. In winter, the upper parts glossy purplish-black, the feathers margined with light grey; the head, cheeks, sides, and fore part of the neck light purplish-grey, the sides and lower tail-coverts streaked with the same; the throat, part of the breast, and abdomen, white. In summer, the upper parts glossy purplish-black, the feathers on the head margined with pale red, on the neck with light grey,

on the back with light red, and tipped with white, the lower parts white, streaked and spotted with dusky grey.

Male, $8\frac{1}{2}$, $14\frac{1}{2}$, $5\frac{5}{12}$, $1\frac{1}{12}$, $\frac{10}{12}$, $\frac{11}{12}$, $\frac{5}{12}$. Female, $9\frac{1}{4}$, $14\frac{1}{2}$.

Although not extremely rare, the Purple Sandpipers are not very frequently met with. This happens partly because they seldom form large flocks, and partly on account of their confining themselves, while searching for food, to the rocky part of the coast. They appear with us about the middle of October, and remain until the end of spring. They fly in curves, sweeping over the sea when removing from one place to another, and now and then emitting a faint shrill cry, in the manner of the Dunlins, which they also closely resemble in their mode of walking or rather running along the shore, where they search the rocks and fuci for small testaceous mollusca, crabs, and onisci. No instance of their breeding in this country has been recorded. They are common in summer in the northern parts of Europe and North America. The eggs are "pyriform, sixteen lines and a half long, and an inch across at their greatest breadth. Their colour is yellowish-grey, interspersed with small irregular spots of pale brown, crowded at the obtuse end, and rare at the other."

Rock Sandpiper.

Tringa maritima, Gmel. Syst. Nat. i. 678.—Tringa maritima, Lath. Ind. Ornith. ii. 731.—Tringa maritima, Temm. Man. d'Ornith. ii. 619.—Tringa maritima, Purple Sandpiper, MacGillivray Brit. Birds, iv.

179. Tringa rufescens. Buff-breasted Sandpiper.

Bill not longer than the head, straight; tail with the middle feathers considerably longer, the three lateral nearly equal; tarsus an inch and a third longer than the middle toe; bill dull olive-green; feet yellowish-green; bare part of the tibia half an inch. The upper parts greyish-yellow, spotted with blackish-brown; the wing-coverts lighter; the quills and coverts light greyish-brown, greenish-black at the end, with the tip whitish, the inner webs whitish in the greater part of their extent, and beautifully dotted with black in undulating lines; the two middle tail-feathers greyish-brown, at the end dusky; the rest gradually paler, edged and tipped with white, within which are two lines of blackish-brown; cheeks, fore part and sides of the neck, with the sides of the body light reddish-yellow, the sides of the body streaked with brownish-black, the rest of the lower parts reddish-white; lower primary coverts dotted with black, as are the inner

webs of the primary quills. The markings of the wing-feathers render this species easily distinguishable from all the rest.

Male, 8, 18, $5\frac{3}{4}$, $\frac{10}{12}$, 1, $1\frac{4}{12}$, $\frac{10}{12}$, $\frac{3}{12}$. Female, 9, 20.

This species, which is said to be not uncommon on the eastern coasts of North America, has occurred twice in England; an individual, now in the possession of Mr Yarrell, having been shot in September 1826, in the parish of Melbourne, in Cambridgeshire, another in the end of July 1832, at Sherringham, in Norfolk.

Tringa rufescens, Yarrell, Linn. Trans. xvi. 109.—Tringa rufescens, Selby, Illustr. ii. 142.—Tringa rufescens, Buff-breasted Sandpiper, Aud. Ornith. Biogr. iii. 451.—Tringa rufescens, Buff-breasted Sandpiper, MacGillivray, Brit. Birds.

180. Tringa pectoralis. Pectoral Sandpiper.

Bill a sixth longer than the head, scarcely deflected at the end; tail with the middle feathers pointed, and much longer than the lateral, of which three on each side are equal; tarsus an inch and a twelfth and a half long; bill olivaceous, dusky toward the end, feet dull yellowish-green. In winter, the feathers of the upper parts greyish-brown, with a darker medial streak, and pale brownish-grey margins; the wing-coverts lighter, the rump dusky; the primary quills blackish-brown, the first with its shaft white, the secondaries grey, edged with white, as are the tail-feathers, except the middle two, which are dusky toward the end; the cheeks, sides, and fore part of the neck, with part of the breast and sides of the body, greyish-white, streaked with dusky; the chin and lower parts white. In summer, the feathers of the upper parts brownish-black, broadly margined with brownish-red, the rump black; the wings and tail as in winter; the cheeks, neck, and part of the breast and sides, brownish-grey, with larger streaks of brownish-black.

Male, 9, 18, $5\frac{9}{12}$, $1\frac{3}{12}$, $1\frac{1}{12}$ and $\frac{1}{2}$, $\frac{10}{12}$, $\frac{3}{12}$. Female, $9\frac{1}{2}$, 19.

This species inhabits the eastern coasts of North America, and is very abundant on those of the New England States. Its habits appear to be similar to those of the Dunlin and other species. An individual, a female, was killed on the 17th October 1830, on the borders of Breydon Broad, near Yarmouth.

Tringa pectoralis, Audub. Ornith. Biogr. iii. 601.—Tringa pectoralis, Temm. Man. d'Ornith. iv. 397.—Tringa pectoralis,

Jen. Brit. Vert. Anim. 210.—Tringa pectoralis, Pectoral Sandpiper, MacGillivray, Brit. Birds, iv.

181. Tringa Cinclus. Dunlin Sandpiper.

Bill a fourth longer than the head, slightly decurved at the end; tail with the middle feathers considerably longer; tarsus an inch long; bill black, feet very dark olive. In winter, the plumage brownish-grey above, each feather with a dusky streak; the sides and fore part of the neck, with a small portion of the breast, paler, and similarly streaked; the throat, breast, and abdomen, white; tail-coverts dusky; tail ash-grey, the inner webs of the middle feathers black. In summer, the upper parts yellowish-red, spotted with brownish-black; the sides of the head, neck, and body, and the fore part of the neck, greyish-white, tinged with red, and distinctly spotted with dusky; a large patch of black on the breast. Young with the upper parts variegated with black and light red; the fore neck, breast, and part of the sides spotted with black; the throat, middle of the breast, abdomen, and lower tail-coverts, white.

Male, $7\frac{8}{12}$, $14\frac{2}{12}$, $4\frac{8}{12}$, $1\frac{3}{12}$, 1, $\frac{10}{12}$, $\frac{2}{12}$. Female, 8, $14\frac{10}{12}$.

In the end of August and beginning of September, the Dunlins appear on our shores in flocks, disperse themselves from one extremity of the island to the other, and continue until the end of spring, when they separate, and betake themselves to the interior, and especially to that of the northern parts of Scotland and its large islands. The nest is a hollow, in which are placed some bits of dry grass or heath, and the eggs, always four, are very large, pyriform, an inch and four or five twelfths in length, eleven-twelfths in breadth, light greyish-green, yellowish or brownish, spotted and patched with umber-brown and light purplish-grey. The young, covered with stiffish down, variegated with yellowish-grey and dark brown, presently leave the nest. When they are fledged, both they and their parents betake themselves to the sea-coast. The food of this species consists of worms, small testacea, crustacea, insects, and larvæ. It runs with rapidity, probes the sand and mud with a light and quick motion, has a rapid flight, and in autumn, becoming fat, is considered delicate food. It is with us the most common species of its genus.

Purre. Stint. Sea-Snipe. Plover's Page. Sea Lark. Ox-bird. Ox-eye.

Tringa Cinclus and Alpina, Linn. Syst. Nat. i. 249, 251.—Tringa Variabilis, Temm. Man. d'Ornith. ii. 612.—Tringa Cinclus, Alpina, and ruficollis, Lath. Ind. Ornith. ii. 735, 736.—Tringa Cinclus, Dunlin Sandpiper, MacGillivray, Brit. Birds, iv.

182. TRINGA SUBARQUATA. CURLEW-BILLED SANDPIPER.

Bill half as long again as the head, and considerably decurved at the end; tail with the middle feathers slightly longer than the lateral; tarsus an inch and a quarter long; bill black, feet very dark olive. In winter, the plumage brownish-grey above, each feather with a dusky streak; the sides and fore part of the neck, with a small portion of the breast, greyish-white, streaked with brownish-grey; the throat, breast, and abdomen, white; the tail-coverts white, the tail brownish-grey. In summer, the upper parts of the body black, mottled and streaked with light red; the sides of the head, the fore part and sides of the neck, and the breast, bright yellowish-red, the neck faintly streaked with dusky; the tail-coverts white, spotted with brown and red; the tail brownish-grey glossed with green. Young with the feathers of the upper parts greyish-black glossed with green, darker toward the margins, and edged with white; the fore part of the neck pale reddish, faintly streaked with dusky, the rest of the lower parts white, as are the upper tail-coverts, which are very narrowly tipped with dusky.

Male, $8\frac{7}{12}$, $16\frac{4}{12}$, $5\frac{5}{12}$, $1\frac{6}{12}$, $1\frac{1}{4}$, $\frac{10}{12}$, $\frac{2}{12}$. Female, $8\frac{10}{12}$, $16\frac{1}{2}$.

In its summer plumage this species is easily distinguished from the Dunlin, the breast being red in the one and black in the other; and at all seasons it may be known by its white upper tail-coverts. It is not extremely uncommon on our coasts during winter, but is probably often confounded with the species just named. It arrives in the beginning of September, and departs in the end of April for more northern countries, it not having been met with breeding in any part of Scotland. Yet it is very extensively distributed, being found in India, at the Cape of Good Hope, in various parts of Europe, and in North America. Its habits are precisely similar to those of the Dunlin.

Pigmy Curlew. Pigmy Sandpiper.

Scolopax subarquata, Linn. Syst. Nat. i. 658.—Tringa subarquata and Numenius Africanus, Lath. Ind. Ornith. ii. 712.—Tringa subarquata, Temm. Man. d'Ornith. ii. 609.—

Tringa subarquata, Curlew-billed Sandpiper, MacGillivray, Brit. Birds, iv.

183. Tringa Schinzii. Schinz's Sandpiper.

Bill about the length of the head, straight; tail nearly even, but with the middle feathers considerably longer; tarsus eleven-twelfths long; bill and feet dusky. In winter, the plumage brownish-black above, the feathers edged with greyish-yellow, the scapulars with light red, the wing-coverts greyish-brown, with a medial dusky line; the rump white; the secondary quills tipped with white; tail light grey, the two middle feathers brownish-black toward the end; sides of the head, fore-neck, anterior part of the breast, and sides of the body greyish-white, with slender lanceolate brownish-black streaks; the rest of the lower parts white.

Male, 7, 14, $4\frac{10}{12}$, $\frac{10}{12}$, $\frac{11}{12}$, $\frac{9}{12}$, $\frac{8}{12}$. Female, $7\frac{1}{2}$.

This species has been found in various parts of North America, from Hudson's Bay to the Gulf of Mexico, and in one instance in the south of England, Mr Gould having introduced it into his splendid work on the Birds of Europe, in consequence of having seen a specimen killed at Stoke Heath, near Market Drayton, Shropshire, and in the possession of Sir Rowland Hill. The species is distinguishable from Tringa Cinclus by its white rump, independently of its other characters.

Tringa Schinzii, Bonap. Synops. of Birds of Unit. States, 249.—Tringa Schinzii, Audub. Ornith. Biogr. iii. 529.—Tringa Schinzii, Temm. Man. d'Ornith. iv. 401.—Tringa Schinzii, Schinz's Sandpiper, MacGillivray, Brit. Birds, iv.

184. Tringa platyrhyncha. Flat-billed Sandpiper.

Bill half as long again as the head, rather thick at the base, a little decurved at the end; tail with the lateral feathers equal, the medial considerably longer; tarsus an inch in length; bill reddish at the base, black toward the end; feet greenish-grey. In summer, according to M. Temminck, the upper part of the head blackish-brown, with two narrow longitudinal light red bands; a white streak dotted with brown over the eyes; the loral band dusky; sides of the head whitish, streaked with brown; feathers of the upper parts black, narrowly edged with red; throat, breast, and abdomen white; fore part and sides of the neck and breast reddish-white, spotted with brown; lateral tail-coverts white, each

with a lanceolate dusky spot; middle feathers of the tail black, edged with red, the rest margined with pale grey.

Male, 7, 14, 4, $1\frac{1}{2}$, 1, $\frac{8}{12}$, $\frac{2}{12}$.

Extensively distributed on the continent, and extending to India. This species, little understood, is liable to be confounded with individuals of Tringa Cinclus, and, in description, with Tringa subarquata, from which latter especially it is widely different. It bears more resemblance to a Snipe than any of the other species, and might, with some propriety, constitute a genus by itself, as indeed it has been made to do by many authors.

Tringa platyrhincha, Temm. Man. d'Ornith. ii. 616. Tringa platyrhincha, Flat-billed Sandpiper, MacGillivray, Brit. Birds, vol. iv.

185. Tringa minuta. Little Sandpiper.

Bill about the length of the head, straight, slender, scarcely enlarged at the end; tail doubly emarginate; tarsus ten-twelfths long; bill and feet dusky. Plumage in winter brownish-grey above, each feather with a dusky streak; the sides of the neck paler, of its lower part tinged with brown; the throat, fore-neck, breast, and abdomen white; the middle tail-coverts dusky, the lateral white; the tail-feathers ash-grey edged with white, the two middle greyish-brown. In summer the upper parts yellowish-red, spotted with brownish-black; the throat, breast, and other lower parts white; the lower anterior and lateral parts of the neck reddish-grey, streaked with brown; a dusky loral band, and a whitish streak over the eye. Young with the upper parts variegated with brownish-black and yellowish-red; the forehead and cheeks brownish-white; the loral space brown; the lower part of the sides of the neck brownish-grey; the throat, fore-neck, and other lower parts white.

Male, 6, 12, $4\frac{7}{12}$, $\frac{10}{12}$, $\frac{10}{12}$, $\frac{7}{12}$ and $\frac{1}{2}$, $\frac{2}{12}$. Female, $6\frac{2}{12}$.

A few individuals of this species have been obtained at various times, generally in autumn, on the southern shores of England. It occurs abundantly in autumn and winter in Holland, Germany, Switzerland, and Dalmatia.

Tringa minuta, Temm. Man. d'Ornith. ii. 625.—Tringa minuta, Selby. Illustr. ii. 147.—Tringa minuta, Little Sandpiper, MacGillivray, Brit. Birds, iv.

186. Tringa Temminckii. Temminck's Sandpiper.

Bill a little shorter than the head, slender, scarcely en-

larged, but a little decurved, at the end; tail graduated; tarsus eight-twelfths long; bill dusky and feet greenish-brown. Plumage in winter deep brown above, each feather with a blackish-brown streak; the fore part of the neck and a portion of the breast reddish-grey; the throat and lower parts white; the middle tail-coverts dusky, the lateral white; the middle tail-feathers greyish-brown, the rest pale grey, the outer white externally. In summer the feathers of the upper parts deep black, margined with red; the forehead and fore part of the neck reddish-grey, finely streaked with black; the throat and lower parts white; the lateral tail-feathers white, the medial black edged with red. Young with the upper parts variegated with greyish-brown and yellowish-grey, the feathers being edged with the latter colour, within which is a band of dusky; a white streak over the eye; the tail-feathers tipped with reddish, except the outer; the lower part of the neck anteriorly reddish-grey.

Male, $5\frac{3}{4}$, $11\frac{1}{2}$, $3\frac{10}{12}$, $\frac{8}{12}$, $\frac{9}{12}$, $\frac{7}{12}$, $\frac{2}{12}$. Female, 6.

This species is distinguished from Tringa minuta by being somewhat smaller, by having the tarsus much shorter, and the tail somewhat wedge-shaped at the end, in place of being doubly emarginate. It has been obtained in the counties of Devon, Sussex, and Norfolk; and on the Continent is pretty generally dispersed.

Tringa Temminckii, Temm. Man. d'Ornith. ii. 622.—Tringa Temminckii, Temminck's Sandpiper, MacGillivray, Brit. Birds, iv.

GENUS XCVI. MACHETES. RUFF.

The bird known in Britain by the name of Ruff, Tringa pugnax of Linnæus, has been separated from the Tringæ by Cuvier to form a genus by itself, bearing the name of Machetes or Fighter, in allusion to the combative propensity of the males during the breeding season. The bill differs in no appreciable degree from that of Tringa cinerea; the general form approaches to that of the genus Limosa; the legs, and especially the toes, are longer than in Tringa, and the latter indicate some approach to the Snipes. Bill scarcely longer than the head, straight, slender, soft, and somewhat flexible; upper mandible with the ridge convex, flattened toward the end, the tip slightly enlarged, obtuse, the nasal groove extending nearly to the end; lower mandible with

the angle very long and narrow, the sides grooved, the tip a little enlarged and obtuse. Mouth extremely narrow; tongue very long, slender, trigonal, channelled above, pointed; œsophagus narrow; stomach broadly elliptical, compressed, with strong muscles, radiated tendons, and dense, thin, rugous epithelium; intestine of moderate length and width; cœca of moderate length, narrow, cylindrical. Nostrils small, linear, pervious, basal, close to the margin. Eyes rather small, both eyelids densely feathered. Aperture of ear rather large, roundish. Legs rather long; tibia bare about a third of its length; tarsus slender, compressed, with numerous anterior scutella; toes slender, first very small and elevated, anterior toes rather long, inner a little shorter than outer, all with numerous scutella, and marginate, the third and fourth connected by a basal web; claws small, arched, much compressed, tapering, acute. Plumage moderately full, soft, rather blended, on the back and wings firm; wing long, pointed, with twenty-five quills; first primary longest, secondaries incurved, the inner much elongated; tail short, doubly emarginate, of twelve feathers.

Only one species is known to me.

187. Machetes pugnax. Ruff.

Male in winter with the bill brown, the feet greenish-yellow, the throat and abdomen white, the fore neck and part of the breast pale reddish-brown, spotted with dark brown, the upper parts variegated with brownish-black and light red. The female similar, but with the upper parts lighter, the lower more grey, the bill and feet dusky. Male in summer with numerous fleshy tubercles on the face, two occipital tufts and a very large ruff of elongated feathers on the neck; the colours of the plumage varying in different individuals, and even in the same at different periods of the same season; the bill and feet orange yellow. The female without tubercles or ornamental feathers; the upper parts greyish-brown, glossed with green; the fore neck and breast pale; the bill and feet dusky. Young with the lower parts pale reddish anteriorly, white behind; the feathers of the upper parts black, margined with light red.

Male, 12, 25, $7\frac{1}{2}$, $1\frac{5}{12}$, 2, $1\frac{2}{12}$, $\frac{4}{12}$. Female, 11, 23.

The female of this species is smaller than the male, the

reverse being the case in the rest of this family. Formerly the Ruff bred in great numbers in the fenny districts along the eastern coast of England; but, owing to the draining of the marshes, and the increase of population, it is now of rare occurrence in those parts. It appears that many of these birds now merely sojourn with us for a short time during their vernal and autumnal migrations. On the east coast of Scotland they appear as early as the middle of September, and depart in about a fortnight; but I have never seen an adult male killed there, the little flocks that occur being young birds, and females. The species is extensively distributed on the Continent, breeding in the marshes. The males assume a station in spring, where they provoke others, and engage in protracted combats, fighting in the manner of domestic cocks. The females form a slight nest on the ground, lay four pyriform, spotted eggs, and rear their young, without the aid of the males. These birds were formerly caught in great numbers in England, and fattened for the table with farinaceous substances, which they soon relish.

The male is named Ruff, the female Reeve.

Tringa pugnax, Linn. Syst. Nat. i. 247.—Tringa pugnax, Lath. Ind. Ornith. ii. 725.—Tringa pugnax, Temm. Man. d'Ornith. ii. 631; and Machetes pugnax, iv. 411.—Machetes pugnax, Ruff, MacGillivray, Brit. Birds, iv.

GENUS XCVII. NUMENIUS. CURLEW.

Were we to view a Curlew-billed Sandpiper or a Dunlin through a magnifying medium, such as would enlarge it to eight or ten times its bulk, it would present the appearance of a Curlew, with this difference, that its bill would not be so much curved. The Numenii, then, are birds of moderate size, especially remarkable for the great length and curvature of their bill, which is at least twice as long as the head, slender, arcuate, larger at the base, tapering to the end; upper mandible with the ridge broadly convex, the edges involute, the tip elliptical, obtuse, and extending beyond that of the lower, the nasal groove very long and narrow; lower mandible with the angle very narrow, extending to the middle, and bare anteriorly, the outline arcuate, the sides of the crura a little inflected, and have a longitudinal groove, the tip blunt. Both mandibles very thick,

having a narrow medial groove, not occupied by the tongue, which is short, sagittate, narrow, tapering, grooved above, acute; œsophagus very long, and rather narrow; proventriculus oblong; stomach a large and powerful gizzard, having the muscles distinct, the tendons radiated, and the inner coat rugous; intestine long, of moderate width; cœca rather slender, cylindrical, shortish; cloaca globular. Nostrils linear, pervious, basal. Eyes rather small, eyelids feathered. Aperture of ear moderate, roundish. Legs long and slender; tibia bare below, reticulated; tarsus long, reticulated, but having for two-thirds of its length anteriorly a series of short scutella; toes rather short, slender, with numerous scutella, broad and flat beneath, the anterior webbed to the second joint, the hind toe very small; claws small, slightly arched, compressed, obtuse. Plumage moderately full, soft, blended; the feathers oblong or lanceolate; wings very long, narrow, pointed, with about thirty quills; first primary longest, the rest rapidly graduated; secondaries slightly incurved, some of the inner much elongated and tapering; tail rather short, rounded, of twelve acuminate feathers, the two medial considerably longer.

The Curlews are closely allied to the Tringæ and Limosæ, and in some respects, especially the form of the bill, to the Ibises. They are generally distributed, of migratory habits, frequent the shores in winter and spring, breed in waste and marshy ground, laying four pyriform, spotted eggs. They are suspicious, easily alarmed, run with great celerity, have a light and rapid flight, and feed on insects, larvæ, mollusca, and crustacea. Both sexes are alike, and the summer plumage does not differ from that of winter. Their flesh is excellent. Two species occur in Britain.

188. Numenius Arquata. Great Curlew.

Length from twenty-one to twenty-six inches; bill from five to seven inches; plumage of the head, neck, and fore part of the back, light reddish-grey, streaked with blackish-brown; the hind part of the back white, with narrow, longitudinal dark marks; the tail white, with twelve black bars; the breast, sides, and abdomen white, with lanceolate black spots and bars.

Male, 23, 38, 5, 12, 5, $3\frac{1}{12}$, $1\frac{3}{4}$, $\frac{4}{12}$. Female, 25, 42.

This species is generally distributed in Britain, and common in most districts. It retires to the interior to breed, forming a slight nest, and laying four very large eggs, three inches long, an inch and ten-twelfths in breadth, light olive or dull yellowish-brown, or pale greenish-grey, blotched and spotted with umber-brown. During the rest of the year it chiefly frequents the sea-shore. It feeds on worms, larvæ, mollusca, and crustacea, and may be seen probing the mud and sand with its long bill, although it also picks up an object from the surface. It is very shy and vigilant, alarming other birds by its reiterated loud cries, runs with speed, and has a strong and rapid flight. It emits various cries, often curiously modulated. Being in some request as food, it is often seen in the markets.

Whaup. Stock Whaup. Whitterick.

Scolopax Arquata, Linn. Syst. Nat. i. 242.—Numenius Arquata, Lath. Ind. Ornith. ii. 710.—Numenius Arquata, Temm. Man. d'Ornith. ii. 603.—Numenius Arquata, Great Curlew, MacGillivray, Brit. Birds, iv.

189. Numenius Phæopus. Whimbrel Curlew.

Length from sixteen to nineteen inches; bill little more than three inches; upper part of the head dark brown, with a medial and two lateral whitish bands, streaked with dusky; neck all round pale brownish-grey, streaked with brown; feathers of the fore part of the back, scapulars, and wing-coverts dusky, with marginal whitish spots; hind part of back white, tail and coverts greyish-white barred with dusky; chin, hind part of breast, and abdomen white; fore part of breast streaked, sides and lower wing-coverts barred with dusky. The female is much larger, with the bill proportionally longer.

Male, 17, 30, $9\frac{3}{4}$, $3\frac{2}{12}$, $2\frac{4}{12}$, $1\frac{4}{12}$, $\frac{2}{12}$. Female, 19, 33.

Common on some parts of the coast during its passage northward, chiefly frequenting sandy pastures. It has been found breeding in Shetland. The eggs are four, two inches and a half in length, an inch and two-thirds in breadth, pyriform, and coloured like those of the Great Curlew. It appears again on the coast in autumn, and many remain along the shores, in England, all winter. Its habits are very similar to those of the last species, but its cry is less loud and more modulated. Neither this nor the Great Curlew, although very extensively distributed, occur in America, where, how-

ever, there is a species so very similar to the Whimbrel as to have generally been confounded with it. That species, Numenius Hudsonicus, may be at once distinguished by its having no white on the rump.

Whimbrel. Little Curlew. Half Curlew. Curlew Jack. Tang Whaap. Mayfowl.

Scolopax Phæopus, Linn. Syst. Nat. i. 243.—Numenius Phæopus, Lath. Ind. Ornith. ii. 711.—Numenius Phæopus, Temm. Man. d'Ornith. ii. 604.—Numenius Phæopus, Whimbrel Curlew, MacGillivray, Brit. Birds, iv.

GENUS XCVIII. LIMOSA. GODWIT.

The Godwits may be likened to Curlews having the bill not arcuate or decurved, but slightly rearcuate or recurved. They are generally of smaller size, and of a rather more slender form. Bill about twice the length of the head, or more, slender, at the base higher than broad, tapering, toward the end depressed, in its whole length slightly curved upwards; both mandibles flexible in a considerable degree, laterally grooved nearly to the points, which are slightly enlarged and obtuse; upper mandible with the ridge flattened at the base and toward the end, elsewhere convex; lower with the angle long and very narrow; the edges of both soft, blunt, and grooved. Mouth extremely narrow; palate with two rows of papillæ on each side, and three anterior rows; tongue long, emarginate and papillate at the base, fleshy at first, but soon becoming horny, trigonal, grooved above, tapering to a fine point; œsophagus long and narrow; proventriculus oblong; stomach a strong gizzard, elliptical, compressed, with radiated tendons, rather large lateral muscles, and dense, rugous epithelium; intestine rather long and narrow; cœca small, cylindrical, slender. Eyes small. Nostrils basal, linear. Aperture of ear moderate. Legs long or of moderate length, slender; tibia bare for rather more than a third; tarsus scutellate; toes rather short, slender, broad, and flattened beneath, the outer connected with the third by a rather large basal web, running out narrow to the end of both toes, the hind toe very small, and elevated; claws small, arched, compressed, rather obtuse. Plumage moderate, blended, on the upper parts rather compact; wings long,

narrow, pointed, with thirty quills, the first longest, the rest rapidly graduated; secondaries slightly incurved, some of the inner much elongated and tapering; tail short, of twelve rounded feathers, the four medial a little longer.

The Godwits differ little from the Curlews in their habits. They are generally distributed, and two species occur in Britain.

190. Limosa rufa. Barred-tailed Godwit.

Bill about four inches long, bent upwards; male about fifteen, female seventeen inches long; tarsus about two inches and two-twelfths; bill flesh-coloured, dusky in its terminal half; feet greyish-blue, toes darker, claws black, short, blunt, that of the middle toe without curvature. In winter, the head and neck pale grey, with small brownish-grey streaks; a broad band over the eye; the throat, breast, and other lower parts white; feathers of the fore part of the back and scapulars grey, with a central brown streak; hind part of back white; tail white, with eight dusky bars. In summer, the upper part of the head blackish-brown streaked with reddish; band over the eye light red; cheeks, throat, and lower parts yellowish-red; feathers of the fore part of the back and scapulars blackish-brown, mottled with reddish-yellow and light grey; hind part of back white with yellow spots; tail white, barred with brown. Young with the upper part of the head blackish-brown, streaked with pale brownish-grey; band over the eye white, dotted with brown; cheeks and neck all round light brownish-grey, streaked with grey; lower parts white; upper variegated with blackish-brown and pale reddish-grey; hind part of back white, with dusky spots; tail white, barred with dusky.

Male, 15, 30, $8\frac{9}{12}$, $3\frac{10}{12}$, $2\frac{2}{12}$, $1\frac{2}{12}$, $\frac{3}{12}$. Female, $17\frac{1}{2}$, 31.

When seen flying at a moderate distance, this bird so much resembles the Whimbrel, that I have several times mistaken it for that species. It appears in small flocks on our coasts in the beginning of September, frequenting more especially the muddy parts at the mouths of streams, remains with us during the winter, and disappears in April. Its flight is moderately rapid, light, somewhat buoyant, and greatly resembles that of the Curlews. It emits a loud, shrill whistle, and on rising utters a low, modulated sound. Walking for the most part sedately, but sometimes running, it taps and probes the mud and sands in search of worms and other small

animals, frequently mingling with sandpipers and sand-plovers. It does not appear that this species has been found breeding in any part of Britain, although it has been seen by Mr John MacGillivray in North Uist in July, and therefore probably breeds there.

Red-breasted Godwit. Common Godwit. Red Godwit. Grey Godwit. Yar Whelp. Poor Willie. Godwyn.

Scolopax Lapponica, Linn. Syst. Nat. I. 246.—Scolopax Lapponica and leucophæa, Lath. Ind. Ornith. ii. 718, 719.—Limosa rufa and Meyeri, Temm. Man. d'Ornith. ii. 668, iv. —Limosa rufa, Barred-tailed Godwit, MacGillivray, Brit. Birds, iv.

191. Limosa melanura. Black-tailed Godwit.

Bill about three and a half inches long, straight; tarsus about three inches and three quarters long; bill orange, dusky at the end; feet brownish-black; claws slender, rather pointed, that of the middle toe serrated; tail black, at the base white; wings with a conspicuous white band. In winter the upper parts greyish-brown, streaked with dusky; fore part of neck, breast, and sides pale grey; middle of breast, abdomen, base of quills, secondary coverts, and tail feathers white. In summer the neck, breast, and sides bright red, dotted and barred with dusky; fore part of the back and scapulars black, variegated with light red. Young with the feathers of the upper parts blackish-brown, margined with light red; the neck pale reddish-grey.

Male, 16, 30, $8\frac{9}{12}$, 4, $1\frac{6}{12}$, $\frac{6}{12}$. Female, $17\frac{3}{4}$.

This species breeds in small numbers in some of the English fens. The greater number of individuals, however, appear to be migratory, visiting our coasts in October, and departing in the end of spring. It is much less numerous with us than the other species, which it resembles in its habits.

Red Godwit. Lesser Godwit. Jadreka Snipe.

Scolopax Limosa, Linn. Syst. Nat. i. 245.—Scolopax Limosa, and Ægo-cephala, Lath. Ind. Ornith. ii. 719.—Limosa melanura, Temm. Man. d'Ornith. ii. 664.—Limosa melanura, Black-tailed Godwit, MacGillivray, Brit. Birds, iv.

GENUS XCIX. PHALAROPUS. PHALAROPE.

The only species of this genus known to me is a small bird of about the size of the Purple Sandpiper, and which

at first sight might be taken for a Tringa, although its feet differ so much as to render it expedient to separate it from that genus. It is, one may say, a Tringa with the toes lobed or scolloped. The body rather slender, the neck of moderate length, the head small, compressed, with the forehead elevated and rounded. Bill rather longer than the head, almost quite straight, slender, subcylindrical; upper mandible with the dorsal line straight, the ridge flattened, the nasal groove extending two-thirds, the breadth considerably enlarged toward the end, the tip obtuse; lower mandible with the angle long and extremely narrow, the sides erect and grooved, the tip rather acute. Eyes rather small. Nostrils basal, oblong, with an elevated margin. Aperture of ear roundish, and of moderate size. Legs short, extremely slender; tibia bare to a considerable extent; tarsus short, much compressed, anteriorly scutellate; hind toe diminutive; anterior toes of moderate length, the second slightly shorter than the fourth; the three connected at the base by webs, and laterally margined with a lobed membrane; claws very small, arched, compressed, rather sharp. Plumage full, soft, blended; the feathers oblong, and much curved. Wings long, pointed, with twenty-five quills; the first and second quills longest; secondaries incurved, the inner very long and tapering; tail short, rounded, of twelve feathers.

The dense plumage, impervious to water, and the expanded margins of the toes, indicate an affinity to the Palmipede birds.

192. Phalaropus lobatus. Grey Phalarope.

In winter, the back of a fine pale purplish blue, the occiput and a line down the back of the neck greyish-black, the forehead, sides of the head, neck, and lower parts, white. The wing-coverts blackish, as are the primary quills, and some of the very elongated and pointed inner secondaries; the shafts of the quills, and the margins and tips of the secondary coverts, and the tips of the primary coverts, white; the middle tail-feathers deep brown, margined with white, the lateral shaded into ash-grey; bill black, feet pale brown, lobes grey, claws black. In summer, the bill yellow, with the point dusky, the feet greyish-blue; upper part of the head black; fore part of the back, the scapulars, and inner secondaries, black, margin-

ed with light red; wing-coverts and quills greyish-black; a white band across the wing; the rump white, streaked with dusky; the tail deep grey, dusky toward the end; forehead dusky grey; sides of head, white; fore-neck, breast, abdomen, and lower tail coverts, light red.

Male, $8\frac{1}{2}$, $15\frac{3}{4}$, 5, $\frac{10}{12}$, $\frac{11}{12}$, $\frac{9}{12}$, $\frac{9}{12}$.

Extends in summer into the Arctic regions of both Continents, where it breeds. The eggs are ovato-pyriform, four, an inch and two-eighths long, seven-eighths in breadth, oil-green, clouded and spotted with umber-brown. Although it searches the shores of the sea, lakes, and rivers, in the manner of a Tringa, it is frequently seen at a great distance from land, walking on masses of floating sea-weeds, or swimming in the open ocean. Its economy in this respect is not more wonderful for a bird of this family than that of the Coot in the family of Gallinules, and more especially of the Dipper in that of Thrushes or Ant-catchers. Its flight is rapid, according to Mr Audubon, like that of Tringa Cinclus; it runs with ease, and swims with great speed.

Red Phalarope. Grey Phalarope. Coot-foot.

Tringa lobata and fulicaria, Linn. Syst. Nat. i. 249.—Phalaropus lobatus and glacialis, Lath. Ind. Ornith. ii. 776.—Phalaropus platyrhynchus, Temm. Man. d'Ornith. ii. 712.—Phalaropus lobatus, Grey Phalarope, MacGillivray, Brit. Birds, iv.

GENUS C. LOBIPES. LOBEFOOT.

It appears that not more than three species of this genus are known. They are small birds of slender form, with the body somewhat elongated; the neck rather long and slender; the head small, compressed, with the forehead elevated and rounded. Bill rather longer than the head, straight, or very slightly recurved, very slender, depressed, tapering; upper mandible with the ridge convex, flattened at the base, the nasal groove extending nearly to the end, the tip slender and pointed; lower mandible with the angle long and extremely narrow, the sides sloping outwards and grooved for three-fourths, the tip acute. Mouth extremely narrow; tongue long, extremely slender, horny, trigonal, grooved above, tapering to a fine point; œsophagus narrow; proventriculus oblong; stomach elliptical, with strong late-

ral muscles, large tendons, and dense, longitudinal, rugous epithelium; intestine of moderate length and width; cœca moderate, cylindrical. Eyes small. Nostrils basal, linear. Aperture of ear roundish and moderate. Legs of moderate length, slender; tibia bare to a considerable extent; tarsus much compressed, thin-edged anteriorly; first toe diminutive; anterior toes of moderate length, the second slightly shorter than the fourth; the three connected at the base by webs, of which the outer is longer, and laterally margined with a lobed and pectinated membrane; claws very small, curved, compressed, pointed. Plumage full, soft, blended; feathers oblong and much curved; wings long, pointed, the first quill longest; secondaries fifteen, incurved, the inner very long and tapering; tail rather short, much rounded, of twelve feathers.

This genus differs from Phalaropus chiefly in having the bill more slender, depressed, and tapering to a point, instead of becoming enlarged toward the end. There is, however, little difference in the habits of the species of these two genera.

193. Lobipes hyperboreus. Hyperborean Lobefoot.

In winter, the forehead, cheeks, fore-neck, and all the lower parts white; the upper part of the head, a band below the eyes, and a narrow band along the hind neck, blackish-grey; upper parts of the body greyish-black, streaked with white; wings with a white band. In summer, the upper parts blackish-grey, the feathers of the back and the scapulars edged with light red, of which colour are the sides and fore part of the neck; throat, breast, and abdomen white; sides grey; wings with a white band. Young with the upper parts blackish-brown, the feathers bordered with light red; quills and wing-coverts brownish-black, edged and tipped with white; forehead, throat, fore-neck, breast, and abdomen white; sides of the neck tinged with reddish-yellow.

Male, $7\frac{3}{4}$, $14\frac{1}{2}$, $4\frac{8}{12}$, $\frac{11}{12}$, $\frac{10}{12}$, $\frac{8}{12}$, $\frac{9}{12}$.

This species breeds in the Orkney and Shetland Islands, where it inhabits the margins of the lakes, forming its nest in the grass near the edge of the water, and depositing four ovato-pyriform eggs, of a light olive or oil-green colour, spotted with brownish-black. It swims with great ease, but is

incapable of diving, and feeds on insects, mollusca, and worms. It has also been seen far out at sea among floating fuci. From the northern parts of both continents, where it passes the summer, it migrates southward in autumn. It does not appear that individuals remain in England all winter, the few that are seen there occurring in the course of their migrations.

Water Snipe. Red Phalarope.

Tringa hyperborea, Linn. Syst. Nat. i. 249.—Phalaropus hyperboreus and fuscus, Lath. Ind. Ornith. ii. 775.—Phalaropus hyperboreus, Temm. Man. d'Ornith. ii. 709.—Lobipes hyperboreus, Hyperborean Lobefoot, MacGillivray, Brit. Birds, iv.

FAMILY XXXVI. TOTANINÆ. TOTANINE BIRDS, OR TATTLERS.

In their general appearance, internal structure, and various organs, the birds which form this family differ little from the Tringinæ. But while the latter have the body moderately full, the legs of ordinary length or considerably elongated, and the bill, though long, soft, and blunt at the end, the Totaninæ have the body slender, the legs often extremely elongated, and the bill extremely slender, attenuated at the end, pointed, and in its terminal half firm though elastic. Upper mandible with the ridge convex, the edges inflected, the nasal groove very narrow and extending half its length, the tip narrowed and slightly decurved; lower mandible with the intercrural space long and extremely narrow, the sides grooved nearly as far as the angle, the edges inflected, the tip narrow. Mouth extremely narrow; tongue very slender, tapering, horny toward the end, pointed; œsophagus narrow; proventriculus oblong; stomach a strong gizzard, with the lateral muscles moderately thick, the epithelium dense and longitudinally rugous; intestine rather long and of moderate width; cœca of moderate length and narrow. Nostrils linear, subbasal, pervious.

Eyes rather small. Aperture of ear rather large. Legs very long and slender; tibia bare to a great extent; tarsus compressed, anteriorly and posteriorly scutellate; hind toe very small and elevated, or wanting; anterior toes slender, of moderate length, webbed at the base; claws small, slightly arched, compressed, rather obtuse. Plumage very soft and blended, on the upper parts rather compact; wings very long, pointed, with twenty-five quills, the first longest, the inner secondaries elongated and tapering; tail short, rounded, of twelve rather soft feathers.

These birds, of moderate size or small, frequent the shores of the sea, lakes, rivers, and marshes, feeding on worms, insects, mollusca, and crustacea, which they obtain partly by boring into the mud, but chiefly by picking them up from the surface, or in the water, in which they all wade. They run with great celerity, vibrate their body when standing, especially if alarmed, emit a loud, shrill, reiterated cry, and have a rapid, though light, and rather buoyant flight. The nest is a slight hollow; the eggs four, very large, pyriform, and spotted. The young, covered with down, run about from the first, and conceal themselves by crouching. Nine species occur in Britain.

GENUS CI. RECURVIROSTRA. AVOSET.

The very few species which constitute this genus are of moderate size, with the body compact, ovate, rather slender; the neck long; the head small, ovate, compressed. Bill more than twice the length of the head, very slender, depressed, tapering to a point, and slightly recurved; upper mandible with the dorsal line straight for half its length, then curved upwards, the nasal groove very narrow, and extending to a third, the point very slender, and slightly decurved; that of the lower mandible still more slender, and slightly curved upwards; the edges of both thick and grooved. Mouth very narrow; two longitudinal series of blunt, re-

versed papillæ, on the palate; tongue slightly emarginate and papillate at the base, slender, tapering, pointed; œsophagus narrow, dilated a little above the middle; proventriculus oblong; stomach an oblong gizzard, with moderate muscles, large radiated tendons, and dense, longitudinally rugous epithelium; intestine rather long, and of moderate width; cœca rather long, cylindrical, narrow. Nostrils linear, perforated, basal. Eyes small. Aperture of ear roundish, rather large. Legs very long, slender; tibia bare for half its length, and with the tarsus reticulated with hexagonal scales; hind toe extremely small and elevated; anterior toes rather short, scutellate, and connected by webs, which are very deeply emarginate; claws very small, almost straight, compressed, tapering, obtuse. Plumage very soft and blended; wings long, rather narrow, pointed, the first quill longest, the secondaries broad, incurved, the inner elongated and tapering; tail short, nearly even, of twelve rather narrow feathers.

These birds, of which one occurs in Europe, and is sometimes met with in England, are much addicted to wading, and are occasionally seen to swim. They do not thrust their bills into the mud, but search it with a lateral wriggling motion of the head, moving the bill from side to side. The eggs are four, pyriform, and spotted. This genus has been entirely misplaced by authors, its affinities being obviously with Himantopus, Totanus, and the other genera of the present group.

194. Recurvirostra Avocetta. Black-and-white Avoset.

Bill black, feet greyish-blue, claws black; the upper part of the head, including the loral space, a small band under the eye, and the hind-neck for half its length, brownish-black; the rest of the neck, all the lower parts, under wing-coverts, middle and hind parts of the back, and the tail, white; an oblique band of black on the fore part of the back on each side; smaller wing-coverts black, larger white, the inner with a blackish-brown patch; primary quills and coverts white at the base, brownish-black in the rest of their extent; secondary quills white.

Male, 18, .., $9\frac{1}{4}$, $3\frac{1}{4}$, $2\frac{11}{12}$, $1\frac{4}{12}$, $\frac{8}{12}$.

The Avoset, now of rare occurrence in any part of Britain, is said to breed in the fens of Lincolnshire, and in Romney Marsh, in Kent. It is not migratory, but, assembling in small flocks, in winter, frequents the shores and estuaries of the south-eastern coasts of England, and feeds on worms, insects, and mollusca, which it obtains by an alternating, lateral motion of the bill among the soft mud. The use of its webs seems to be chiefly to support it on the yielding surface. It wades out in the water, runs with rapidity, vibrates its body when standing, has a powerful flight, and a loud shrill cry, and is said to resemble the Totani and other birds of this family, in its attempts to decoy intruders from its nest or young.

Scooper. Crooked-bill. Cobler's awl. Yelper.

Recurvirostra Avocetta, Linn. Syst. Nat. i. 156.—Recurvirostra Avocetta, Lath. Ind. Ornith. ii. 786.—Recurvirostra Avocetta, Temm. Man. d'Ornith. ii. 590.—Recurvirostra Avocetta, Black-and-white Avoset, MacGillivray, Brit. Birds, iv.

GENUS CII. HIMANTOPUS. STILT-SHANK.

The importance of the hind toe in the Grallatorial series has been much overrated, otherwise the Himantopi, which in all essential respects are most intimately connected with the Totani and Recurvirostræ, would never have been placed in connection with the Plovers, with which they have but a very distant affinity. These birds are of a singularly slender form, with legs so extremely elongated, as at once to suggest the idea of a bird walking on stilts. The body, however, is rather compact and ovate; but the neck is very long and slender; the head small, compressed, and much rounded above. Bill about twice the length of the head, almost straight, being very slightly recurved, very slender, roundish, tapering; upper mandible with the ridge convex, the nasal groove extending half its length, the edges sharp and inflected, the tip very narrow, rather acute, and slightly decurvate; lower mandible with the angle long and extremely narrow, the sides grooved nearly as far as the angle, the edges sharp and inflected, the tip extremely narrow, and just at the end turned a little upwards. Mouth very nar-

row; tongue scarcely half the length of the bill, very slender, tapering, pointed; œsophagus narrow; proventriculus oblong; stomach elliptical, with the lateral muscles moderately thick, the epithelium dense and rugous; intestine of moderate length, narrow; cœca rather short, very narrow. Nostrils linear, subbasal. Eyes rather small. Aperture of ear roundish, and rather large. Legs extremely long and slender; tibia bare for more than half its length; tarsus very slender, compressed, reticulated with hexagonal scales; toes of moderate length, slender, scutellate, unless toward the base; no hind toe; the inner connected with the middle toe by a very slight web, the outer by a web extending nearly to the second joint; claws small, slightly arched, compressed, obtuse. Plumage very soft and blended, on the back and wings compact; wings extremely long, exceeding the tail, narrow, acute, of twenty-eight quills; the first longest, the other primaries rapidly graduated; secondaries incurved, some of the inner tapering and elongated; tail short, nearly even, of twelve feathers.

These birds fly with rapidity, walk and run with celerity, vibrate their body when standing, are remarkably vociferous, and search the mud and sand for worms, insects, crustacea, and mollusca, often wading far into the water. The eggs are four, pyriform, and spotted. The males are larger than the females.

195. Himantopus melanopterus. Black-winged Stilt-shank.

In summer, the bill black, the feet vermilion; the forehead, cheeks, neck, lower parts, and sides of the body, with the greater part of the back, white; the breast tinged with rose-colour; upper part of head and nape greyish-black; fore part of back, scapulars, and wings, black, glossed with green; tail ash-grey. The female somewhat smaller, and with the black of the back less glossy. In winter the forehead, a band over the eyes, fore part of neck, breast, sides, abdomen, lower tail-coverts, and the greater part of the back, white; upper part of the head, nape, and a line below the eye, with the ear-coverts, ash-grey; hind part of neck pale-grey; fore part of back, scapulars, and elongated secondaries, brown, the rest

of the wing black, glossed with green; tail and its coverts ash-grey.

Male, 14, . ., $9\frac{3}{4}$, $2\frac{7}{12}$, $4\frac{10}{12}$, $1\frac{4}{12}$, $\frac{3}{12}$.

This species, which is said to be plentiful in many parts of Asia and the south-eastern portions of Europe, migrates into Germany, France, and Italy, and has been in a few instances obtained in England.

Stilt. Longshank. Long-legged Plover.

Charadrius Himantopus, Linn. Syst. Nat. i. 255.—Charadrius Himantopus, Lath. Ind. Ornith. ii. 741.—Himantopus melanopterus, Temm. Man. d'Ornith. ii. 528.—Himantopus melanopterus, Black-and-white Stiltshank, MacGillivray, Brit. Birds, iv.

GENUS CIII. GLOTTIS. LONGSHANK.

The birds of this genus are closely allied to the Himantopi, but have the legs much shorter, although still very long, and are furnished with a small hind toe. The body is ovate, rather slender; the neck long and slender; the head small, oblong, compressed, with the upper part much rounded. Bill about half as long again as the head, very slender, roundish, compressed toward the end, tapering, beyond the middle slightly inclined upwards; upper mandible with the ridge convex, the nasal groove extending nearly half its length, the edges inflected, and narrowly grooved, the tip narrowed, slightly decurved, and somewhat obtuse; lower mandible with the angle long and extremely narrow, the sides grooved nearly as far as the angle, the dorsal line slightly ascending, the edges inflected, narrowly grooved, the tip narrow, rather obtuse, and very slightly directed upwards. Mouth very narrow; tongue about half the length of the bill, very slender, tapering, horny toward the end, and pointed; œsophagus narrow; proventriculus oblong; stomach elliptical, with its lateral muscles moderately thick, the epithelium dense, and longitudinally rugous; intestine rather long, and of moderate width; cœca of moderate length, and narrow. Nostrils linear, subbasal. Eyes rather small. Aperture of ear roundish, rather large. Legs very long and slender; tibia bare for nearly half its length;

tarsus compressed, scutellate before and behind; toes four, the first very small and elevated; the anterior of moderate length, slightly webbed at the base; claws small, slightly arched, compressed, obtuse. Plumage very soft and blended, on the back and wings compact; wings very long, pointed, with twenty-five quills; the first primary longest, the rest rapidly decreasing; secondaries incurved, some of the inner tapering and elongated; tail short, a little rounded, of twelve feathers.

These birds are of moderate or rather small size. They frequent the shores of the sea, lakes, rivers, and marshes; feed upon worms, insects, crustacea, and mollusca, run with great celerity, vibrate their body when standing, emit a loud, shrill, reiterated cry, and have a rapid, light, and rather buoyant flight. Their nest is a slight hollow; the eggs four, very large, pyriform, and spotted. Some species of the genus are found in most parts of the world; but in Britain only one occurs.

196. Glottis Chloropus. Green-legged Long-shank.

In winter the bill greenish-brown at the base, black toward the end, the feet greenish-grey; the head, hind part and sides of the neck, greyish-white, streaked with brown; the fore part of the back, scapulars, and wing-coverts, greyish-brown, the feathers edged with whitish; the hind part of the back, fore part of the face, and all the lower parts, white, but with faint grey markings on the fore part of the sides, and on the lower wing-coverts; tail white, barred with greyish-brown. In summer, the fore-neck and breast marked with oblong black spots; the fore part of the back and the scapulars black, the feathers margined with whitish.

Male, $14\frac{1}{4}$, 26, $7\frac{1}{2}$, $2\frac{2}{12}$, $2\frac{4}{12}$, $1\frac{2}{12}$, $\frac{2}{12}$.

Generally dispersed in England and some of the southern parts of Scotland during winter, when it is seen in small flocks here and there along the shore, by the margins of rivers, and in marshy places. By the beginning of summer it has disappeared, unless in the north of Scotland and some of its islands, where a few breed. The nest is a shallow cavity, with some fragments of plants; the eggs four, two inches long, an inch and three-eighths in breadth, pale yellowish-green, spotted with dark brown and light purplish-grey. It feeds on insects, worms, and other small animals, runs and

flies with great speed, vibrates its body continually when standing, and is remarkably vociferous, shy, and ready to take alarm, as well as to spread it among the birds around.

Greenshank. Greenshank Snipe. Green-legged Horseman.

Scolopax Glottis, Linn. Syst. Nat. i. 245.—Scolopax Glottis, Lath. Ind. Ornith. ii. 720.—Totanus Glottis, Temm. Man. d'Ornith. ii. 659.—Glottis Chloropus, Green-legged Longshank, MacGillivray, Brit. Birds, iv.

GENUS CIV. TOTANUS. TATTLER.

The Tattlers differ from the Longshanks chiefly in having the bill and legs considerably shorter, and the former quite straight. The body is ovate, rather slender; the neck rather long, and slender; the head small, oblong, compressed, with the forehead considerably rounded. Bill about a third longer than the head, straight, very slender, soft and flexible at the base, hard and elastic toward the end; upper mandible with the ridge convex, the sides grooved to beyond the middle, the edges thick, with a linear groove, the tip slightly declinate, narrowed, blunt, and a little exceeding the other; lower mandible with the angle long and extremely narrow, the sides grooved to the middle, the dorsal line straight, or very slightly concave, the edges thick and grooved, the tip narrowed, and a little obtuse. Mouth very narrow; tongue linear, channelled above, acute; œsophagus narrow; proventriculus oblong; gizzard rather large, oblong, with strong lateral muscles, and rugous epithelium; cœca of moderate length, cylindrical. Nostrils small, linear, basal. Eyes rather small. Aperture of ear roundish, and rather small. Feet long, very slender; tibia bare to a considerable extent; tarsus with numerous broad scutella before, scutellate behind also; toes small, the first diminutive and elevated; the anterior toes with basal webs, of which the outer is larger; claws small, compressed, slightly curved, obtuse. Plumage very soft and blended; wings long, pointed, with twenty-five quills; the first primary longest, the rest rapidly graduated; secondaries incurved, the inner elongated and tapering; tail short, rounded, of twelve narrow, rounded feathers.

The Tattlers are birds of small or moderate size, which frequent the shores of the sea, lakes, marshes, and rivers; feed upon worms, insects, crustacea, and mollusca; have a rapid, light, rather wavering flight, and in their habits generally resemble the Longshanks, being equally remarkable for their timidity, vociferousness, and the balancing motion of their bodies. They are met with in all parts of the world. Four species occur in Britain.

197. Totanus fuscus. Dusky Redshank Tattler.

Adult with the basal half of the bill red, the other half brownish-black, the feet orange-red; the secondary quills black, barred with white. In winter, the upper part of the head and hind-neck brownish-grey; the fore part of the back greyish-brown, streaked with dusky, its hind part white; the tail and its coverts barred with white and dusky; the cheeks and fore-neck greyish-white, faintly streaked with grey, the rest of the lower parts white. In summer, the head, neck, and lower parts, greyish-black, the feathers slightly edged with whitish; those of the fore part of the back, and the wing-coverts, blackish-brown, marginally spotted with black and white; the other parts as in winter. Young with the base of the upper mandible dusky, the feet orange, the upper parts blackish-brown, the feathers edged with triangular white spots, the hind part of the back white, streaked with dusky.

Male, $12\frac{1}{2}$, 23, $6\frac{3}{4}$, $2\frac{2}{12}$, $2\frac{1}{12}$, $1\frac{3}{12}$, $\frac{3}{4}$.

Of rare occurrence in England and Ireland during the winter season, but not yet observed in Scotland. Being in its winter plumage so very similar to the next species, it is liable to be mistaken for it.

Spotted Snipe. Spotted Redshank. Dusky Snipe. Dusky Redshank. Dusky Sandpiper. Cambridge Godwit. Red-legged Godwit.

Scolopax fusca, Linn. Syst. Nat. i. 243.—Scolopax fusca, atra, Cantabrigiensis, Curonica, and Totanus, Lath. Ind. Ornith, 721, 724, 738. Totanus fuscus, Temm. Man. d'Ornith. ii. 639.—Totanus fuscus, Dusky Redshank Tattler, MacGillivray, Brit. Birds, iv.

198. Totanus Calidris. Grey Redshank Tattler.

Adult with the basal half of the bill red, the other half brownish-black, the feet orange-red, the secondary quills

black at the base, white toward the end. In winter, the upper part of the head and hind-neck brownish-grey; the fore part of the back greyish-brown, streaked with dusky, its hind part white; the tail and its coverts barred with white and dusky grey; the fore part and sides of the neck pale grey, streaked with dusky, as are the sides, the rest of the lower parts white. In summer, the cheeks and fore-neck greyish-white, streaked with dusky, the rest of the lower parts white, the sides with angular dusky markings; the upper parts of a deeper tint than in winter. Young with the base of the upper mandible dusky, the feet orange, the upper parts brown, the feathers margined with yellowish, the hind part of the back white, but streaked with dusky.

Male, 12, 22, $6\frac{1}{2}$, $1\frac{7}{12}$, $1\frac{11}{12}$, $1\frac{2}{12}$, $\frac{3}{12}$.

Generally dispersed along the shores in winter, chiefly frequenting muddy and sandy places. It often wades into the water in quest of food, for which it also probes the sand and mud; is suspicious and vigilant, remarkably active and vociferous; has a rapid, wavering flight; and, when standing, is continually vibrating its body. In summer, it frequents inland marshes and pools, forms its slight nest in a hollow, and lays four pyriform eggs, an inch and seven-twelfths in length, an inch and two-twelfths in breadth, pale greenish-grey, spotted and blotched with reddish-brown and blackish-brown. The flesh of this bird not being inferior to the Godwits and Sandpipers, it is often seen in the markets.

Pool Snipe. Sandcock. Redshank. Red-legged Snipe.

Scolopax Calidris and Gambetta, Linn. Syst. Nat. i. 245, 248.—Scolopax Calidris, Gambetta, and Tringa striata, Lath. Ind. Ornith. ii. 728, 733.—Totanus Calidris, Temm. Man. d'Ornith. ii. 643.—Totanus Calidris, Grey Redshank Tattler, MacGillivray, Brit. Birds, iv.

199. Totanus Ochropus. Green Tattler.

Bill dusky above, reddish below; feet greyish-blue, tinged with green; tail nearly even, white, the four middle feathers with three blackish-brown bars toward the end, the outermost feather plain; upper part of head and hind-neck brownish-grey; back, scapulars, and inner secondaries greenish-brown, with marginal whitish and dusky spots; rump white; neck greyish-white, with longitudinal dusky lines; breast and abdomen white; lower wing coverts, axillars, and some of the hypochondrial feathers angularly barred with brown; bill dusky above, reddish beneath; feet greyish-blue tinged

with green. The summer plumage differs from that of winter only in having the upper parts darker and more glossed with green, in there being a greater number of small dots on these parts, and in the spots on the fore part of the neck being guttiform, there being one along the shaft of each feather.

Male, $10\frac{1}{12}$, $17\frac{1}{2}$, $5\frac{8}{12}$, $1\frac{1}{4}$, $1\frac{4}{12}$, $\frac{11}{12}$, $\frac{3}{12}$. Female, $11\frac{1}{2}$, $18\frac{1}{4}$.

It does not appear that this elegantly-formed bird ever breeds in Britain, where it arrives about the middle of September. It frequents pools and small streams, is solitary, and when disturbed emits a shrill whistling cry. It runs and flies with rapidity, and when on wing presents a singular appearance, on account of the pure white patch on its rump.

Tringa ochropus, Linn. Syst. Nat. i. 250.—Tringa ochropus, Lath. Ind. Ornith. ii. 729.—Totanus ochropus, Temm. Man. d'Ornith. ii. 651.—Totanus ochropus, Green Tattler, MacGillivray, Brit. Birds, iv.

200. Totanus Glareola. Wood Tattler.

Bill dusky, greenish at the base; feet greenish grey; tail doubly emarginate, white, all the feathers barred to the base with blackish-brown, the outermost with the inner web plain; upper part of head greyish-brown; back, scapulars, and inner secondaries dark purplish-brown, with marginal whitish and dusky spots; neck greyish-white, with longitudinal dusky lines; breast and abdomen white; lower wing-coverts dusky, edged with white; axillar feathers and some of those on the sides narrowly and irregularly barred with brown.

Male, 9, 15, $5\frac{2}{12}$, $1\frac{3}{12}$, $1\frac{8}{12}$, $1\frac{1}{12}$, $\frac{2}{12}$, and $\frac{1}{2}$. Female, $9\frac{1}{2}$, 16.

This species occurs accidentally or occasionally on the southern and eastern coasts of England, in the course of its autumnal and vernal migrations. It is said to be pretty common in the southern and eastern parts of Europe, and it has been found in India and at the Cape of Good Hope.

Wood Sandpiper.

Tringa Glareola, Linn. Syst. Nat. i. 250.—Tringa Glareola, Lath. Ind. Ornith. ii. 730.—Totanus Glareola, Temm. Man. d'Ornith. ii. 654.—Totanus Glareola, Wood Tattler, MacGillivray, Brit. Birds, iv.

GENUS CV. ACTITIS. WEET-WEET.

The birds which constitute this genus agree with the Totani in their general form; but differ in having the bill not longer than the head, with the margin of the mandibles but

faintly grooved, and the feet also shorter. The body is ovate and slender; the neck of moderate length; the head small, oblong, and compressed, with the forehead rounded. Bill of the same length as the head, straight, very slender, soft and flexible at the base, hard and elastic at the end; upper mandible with the dorsal line straight, the ridge narrow and convex, the sides grooved for three-fourths of its length, the edges thin and sharp, the tip slightly declinate, narrowed, bluntish, and a little exceeding the other; lower mandible with the angle long and extremely narrow, the sides grooved to the middle, the dorsal outline straight, the edges thick and faintly grooved, the tip narrowed, and somewhat obtuse. The digestive organs are similar to those of the Totani, as are the organs of sense and the limbs, the feet being proportionally shorter. The plumage is also similar.

The Weet-weets are small migratory birds, which frequent the sandy and muddy margins of lakes, rivers, and estuaries. They are especially remarkable for the vibratory motion of their body, and their shrill cries. They feed on insects, larvæ, worms, and mollusca; have a rapid, somewhat undulated, and vacillating flight, and run with great celerity. Their nest is a slight hollow; the eggs four, pyriform, light coloured, and spotted with dusky or brown. Two species occur in Britain; one very common, the other the reverse.

201. Actitis Hypoleucos. White-breasted Weet-weet.

A little larger than the Dunlin, but of more slender form; with the bill dusky, the feet greenish-grey; the upper parts glossy greenish-brown, transversely banded and undulated with dark-brown; the lower parts white, excepting the fore part and sides of the neck, which are greyish, with faint dusky lines. Young with the upper parts lighter, the feathers margined with dusky and reddish, the feet ochraceous.

Male, $8\frac{1}{2}$, 14, $4\frac{9}{12}$, $\frac{1}{12}$, $\frac{1}{12}$, $\frac{2}{12}$ and $\frac{1}{2}$.

This elegant little bird arrives in England about the middle of April, in Scotland toward the end of that month, betaking itself to the sandy or gravelly shores of lakes, rivers, and brooks, sometimes also of estuaries, where it procures its food, breeds, and remains until its departure in September.

It is generally dispersed, and of common occurrence; is remarkable for its activity, and the vibrating movements of its body; has a rapid devious flight, skimming over the water, at intervals with stiffened and arched wings, and uttering its loud shrill cries; runs with great celerity; is vigilant and rather suspicious, but easily approached within shooting distance. The nest is a slight hollow in the sand, or among pebbles; the eggs always four, enormously large, an inch and four-twelfths in length, an inch in breadth, broadly pyriform, reddish-white or cream-coloured, glossy, and covered with dots and small spots of dark purplish-brown, and greyish-purple. After the young are fledged, they do not collect into large flocks, nor betake themselves to the sea-shore. Their food consists of insects and larvæ.

Common Sandpiper. Water Junket. Willy-wicket. Fiddler.

Tringa Hypoleucos, Linn. Syst. Nat. i. 250.—Tringa Hypoleucos, Lath. Ind. Ornith. ii. 731.—Totanus Hypoleucos, Temm. Man. d'Ornith. ii. 657.—Actitis Hypoleucos, White-breasted Weet-weet, MacGillivray Brit. Birds, iv.

202. Actitis macularia. Spotted Weet-weet.

Slightly inferior in size to the White-breasted species, which it precisely resembles in form; with the bill dusky at the point, greenish-brown above, yellow beneath; the upper parts glossy greenish-brown, the head longitudinally streaked, the rest transversely banded, with dark brown; the lower parts white, marked all over with roundish dusky spots. Young with the upper parts lighter, the feathers of the head margined with dusky, the back and wings with more numerous dusky bars, the lower parts brownish-white, unspotted. Tringa Cinclus, in autumn, having black spots on the breast and sides, is apt to be mistaken for it.

Male, 8, 13, $4\frac{6}{12}$, $\frac{11}{12}$, $\frac{11}{12}$, $\frac{9}{12}$, $\frac{3}{12}$.

This species is abundant in many parts of North America, where it is migratory, and frequents the margins of rivers and pools. Its habits, as detailed by the ornithologists of that country, are similar to those of our White-breasted Weet-weet, which it resembles so closely in form. Individuals have been shot on the continent of Europe, and a few are recorded to have been obtained in England.

Spotted Sandpiper.

Tringa macularia, Lath. Ind. Ornith. ii. 734.—Totanus macularius, Temm. Man. d'Ornith. ii. 656.—Actitis macularia, Spotted Weet-weet, MacGillivray, Brit. Birds, iv.

FAMILY XXXVII. SCOLOPACINÆ. SCOLOPACINE BIRDS, OR SNIPES.

Although, when viewed collectively, the Scolopacinæ present peculiar characters by which they may be distinguished as a family, yet some of them are so closely allied to several of the Tringinæ, that, in description, they can scarcely be distinctly separated, so that the limits of the two families cannot be clearly marked. The general characters of the Scolopacinæ, however, appear to be the following. They are birds of small size, our Woodcock being among the largest, with the body compact and rather full; the neck of moderate length; the head much compressed, and rounded above. The bill is always very long, flexible, straight, slender, compressed, toward the end enlarged, depressed, and having numerous nervous filaments under the cuticle, which, on becoming dry, is marked with scrobiculi or small depressions; the tips of both mandibles hard, narrowly obtuse, that of the lower shorter, and received into the upper, so as to offer no impediment to the intrusion of the bill into the mud. This character occurs slightly in some of the Tringinæ also. The mouth extremely narrow; the tongue long, very slender, soft, thin, channelled above, acutely pointed; the roof of the mouth with a double series of short, pointed, reversed, papillæ; œsophagus narrow; stomach a roundish, compressed, muscular gizzard, with dense plicate epithelium; intestine of moderate length and width; cœca rather long. Nostrils very small, linear, basal. Eyes moderate, generally high on the head. Aperture of ear large, round-

ish. Legs short; tibia bare for a very short space; tarsus short, anteriorly scutellate; toes four, the first very small and elevated; the anterior toes long, slender, scutellate, the fourth little longer than the second, the third much longer; claws slender, little arched, acute. Plumage moderately compact; wings long, pointed, of twenty-five quills, of which the first is generally longest, the inner secondaries much elongated; tail short, of twelve or more narrow feathers.

These birds reside in marshy places, in which they search for food by thrusting their delicately sentient bills into the mud or soft ground, and apparently sucking in the worms and larvæ with which they come in contact. They are true probers, never feeding in any other manner, and differ from the birds of the other families in leading a skulking sort of life, being generally concealed among the herbage, seldom or never uttering cries unless when on wing, and crouching when apprehensive of danger, in which circumstances they differ from all the Tringinæ and Totaninæ. They walk well, but run little, have a rapid flight, alight abruptly, utter harsh shrill cries; nestle on the ground, and lay four very large, pyriform, spotted eggs. The young, covered with thick variegated down, run from the first, and squat to conceal themselves. The plumage of the adults is variegated with tints of brown, red, and dusky. The females are larger than the males. Species of this family occur in marshy places in all parts of the globe. In Britain, one is permanently resident, two common in winter, and four more have been met with as stragglers.

GENUS CVI. MACRORHAMPHUS. LONGBEAK.

This genus, scarcely distinguishable from the next, contains only a single species, of which the generic characters may be thus briefly given. Body ovate, compact; neck of

moderate length; head small, oblong, convex above, narrowed in front. Bill more than twice the length of the head, straight, slender, compressed for more than half its length, depressed, and a little widened toward the end; the sides of both mandibles grooved, their terminal third scrobiculate, the tips hard, narrowly obtuse, that of the lower shorter. Mouth very narrow, its roof with three longitudinal series of papillæ; tongue very long, slender, channelled above, tapering to a point; œsophagus rather narrow; stomach an oblong muscular gizzard; intestine of moderate length and width; cœca moderate, cylindrical, narrowed at the commencement. Nostrils small, linear, lateral, basal. Eyes small; eyelids feathered. Aperture of ear rather large. Legs of moderate length, slender; tibia bare for nearly a third; tarsus compressed, scutellate before and behind; first toe very small, slender; anterior toes of moderate length, slender, scutellate, webbed at the base, the outer web large; claws small, slightly arched, slender, compressed, acute. Plumage firm, but blended; wings long, narrow, pointed; the first primary longest, the rest rapidly graduated; inner secondaries very long; tail rather short, nearly even, of twelve rounded feathers.

The only species of this genus differs from the Scolopaces in having the toes shorter and webbed at the base, in frequenting the open sea-shore, and in changing its plumage from grey in winter to red in summer. It thus forms the transition from the Scolopacinæ to the Godwits and Sandpipers.

203. Macrorhamphus griseus. Grey Longbeak.

About the size of our Common Snipe; with the bill more than twice the length of the head; the tail nearly even; the outer and middle toes connected by a rather large basal web. In winter, the plumage of the upper part of the head and hind-neck brownish-grey; the fore part of the back of the same colour, spotted with dusky; the rump and tail white, transversely barred with blackish-brown; the lower parts white, the sides and lower tail-coverts barred with dusky. In summer, the upper parts variegated with brownish-black and light reddish-yellow; the lower light yellowish-red, more or less spotted and barred with dusky.

Male, $10\frac{1}{2}$, 18, $5\frac{7}{12}$, $2\frac{1}{2}$, $1\frac{3}{12}$, 1, $\frac{3}{12}$. Female, $10\frac{3}{4}$, 19.

This species is extremely abundant on the coasts of the United States of America during its progress to and from the northern districts, in which it breeds, and, being highly esteemed for the table, is shot in vast numbers. Montagu first recorded its occurrence in England, having obtained a male, which was shot on the coast of Devonshire. Another individual has since been killed at Yarmouth.

Brown Snipe. Grey Snipe. Red-breasted Snipe.

Scolopax grisea and Novæboracensis, Gmel. Syst. Nat. i. 658.—Scolopax grisea and Novæboracensis, Lath. Ind. Ornith. i. 658, 724.—Scolopax grisea, Lath. Man. d'Ornith, ii. 679.—Scolopax grisea, Grey Snipe, MacGillivray, Brit. Birds, iv.

GENUS CVII. SCOLOPAX. SNIPE.

The species of this genus, varying in size from that of the Dunlin to that of the Woodcock, and generally so similar in colour as to be with difficulty distinguishable, have the body ovate and compact; the neck of moderate length; the head small, oblong, and rounded above. Bill about twice the length of the head, flexible, straight, slender, compressed, with both mandibles grooved, and in their terminal third scrobiculate, and more or less enlarged, with the tips hard and narrowed, but blunt, that of the lower shorter. Mouth very narrow; its roof with two or three longitudinal series of pointed, reversed papillæ; tongue very long, slender, channelled above, tapering to a point; œsophagus rather narrow; stomach an oblong or roundish muscular gizzard; intestine of moderate length and width; cœca moderate, cylindrical, narrowed at the commencement. Nostrils small, linear, lateral, basal. Eyes small; eyelids feathered. Aperture of ear rather large. Legs rather short, slender; tibia bare for nearly a fourth; tarsus compressed, scutellate before and behind; first toe very small, slender, and elevated; anterior toes rather long, slender, scutellate, free; claws small, slightly arched, slender, compressed, acute. Plumage rather firm; wings long, narrow, pointed; the first primary longest, the rest rapidly decreasing; inner secondaries very long; tail short, of from twelve to twenty-four feathers.

The Snipes inhabit marshy places, in which they search

for their food in a hideling manner, never appearing in open places, or running about like the Tringæ, nor forming dense flocks, although vast numbers of individuals often occur in a small extent of ground. They nestle on moors and heaths, in moist pastures, meadows, and marshes, forming a slight nest, and depositing four very large, pyriform, spotted eggs. They are generally distributed on both continents, but those of Europe and America are distinct.

204. Scolopax solitaria. Solitary Snipe.

Tail rounded, of sixteen feathers; bill twice the length of the head; two longitudinal black bands on the head, separated by a narrower medial yellowish-white band, and on each side a band of the same colour; the upper parts variegated with black and light red, with four longitudinal yellowish-white bands; the wing-coverts tipped with white; sides transversely barred with dusky; axillar feathers white, barred with greyish-black; three lateral tail-feathers on each side white.

Male, $12\frac{1}{2}$, 19, . . , $2\frac{2}{12}$.

This species, although it has not very unfrequently been met with in England, is apparently an irregular winter visitant. Being so very similar to our Common Snipe, it is probably sometimes mistaken for it. It is generally dispersed over the continent, breeding in the northern regions. The name of *major* given to this species is inadmissible, now that several large species are known.

Solitary Snipe. Great Snipe. Double Snipe.

Scolopax major, Gmel. Syst. Nat. i. 661.—Scolopax major, Lath. Ind. Ornith. ii. 714.—Scolopax major, Temm. Man. d'Ornith. ii. 675.—Scolopax solitaria, Solitary Snipe, MacGillivray, Brit. Birds, iv.

205. Scolopax Sabini. Sabine's Snipe.

Tail rounded, of twelve feathers; bill more than twice the length of the head; the head and hind-neck brownish-black, spotted with dull chestnut-brown; back and wings black, barred and spotted with chestnut-red; tail black for half its length, then chestnut-red, barred with black; fore-neck and lower parts dull light red, undulated with dusky.

Adult, $9\frac{3}{12}$, . . , . . , $2\frac{7}{12}$, $1\frac{1}{4}$, . . , . . .

This species was first described by Mr Vigors in the fourteenth volume of the Transactions of the Linnæan Society,

from an individual killed in Queen's County, in Ireland, in 1822. A few specimens have since been obtained in England. It has not been met with in any other part of the world.

Scolopax Sabini, Vigors, Linn. Trans. xiv. 556.—Scolopax Sabini, Jardine and Selby's Illustrations of Ornith. pl. xxvii. —Scolopax Sâbinii, Temm. Man. d'Ornith. iv. 432.—Scolopax Sabini, Sabine's Snipe, MacGillivray, Brit. Birds, iv.

206. Scolopax Gallinago. Bleater Snipe.

Tail rounded, of fourteen feathers; secondary quills rounded; bill twice the length of the head; on the head two longitudinal black bands separated by a narrower medial reddish-white band, and on each side a reddish-white band; the upper parts variegated with black and light red, with four longitudinal yellowish-white bands; sides transversely barred with dusky; axillar feathers white, barred with greyish-black, lower tail-coverts light red, barred with dusky; bill greyish-blue at the base, dusky in the rest of its extent, but with two-thirds of the ridge flesh-coloured; feet pale greenish-blue.

Male, 10, 17, $5\frac{1}{4}$, $2\frac{8}{12}$, $1\frac{2}{12}$, $1\frac{2}{12}$, $\frac{4}{12}$. Female, $10\frac{1}{2}$, $17\frac{1}{4}$.

Adult birds vary considerably in size, and especially in the length of the bill. Albinoes and variegated individuals are also sometimes met with. This species is generally distributed in Britain and Ireland, residing in marshy places, moors, and wet meadows. In summer it leaves the southern parts, and breeds on the heaths and moorlands, forming a slight nest in a hollow, and laying four very large pyriform eggs, an inch and seven-twelfths in length, an inch and one-twelfth in breadth, of a greyish-yellow colour, tinged with greenish-blue, irregularly patched and spotted with dark-brown and brownish-grey. The young, covered with down of a brownish-red colour, spotted with dusky brown and white on the upper parts, presently leave the nest, concealing themselves by crouching. The males, in the breeding season, ascend high in the air, where they wheel about, and, by quivering their wings while descending in a curve, produce a singular noise, somewhat resembling the bleating of an old goat. In winter they betake themselves to the lower parts, feeding chiefly at night, and procuring their food entirely by plunging their bills into the mud. Their flesh being delicate and savoury, they are in much request, and are caught in various ways, as well as shot, in great numbers. The flight of this

species, on its being flushed, is at first performed in a zigzag manner, until it attains some distance, when it ascends and flies high. Its cry is shrill and harsh.

Common Snipe. Moor or Mire Snipe. Heather Bliter, Bleater, or Blutter.

Scolopax Gallinago, Linn. Syst. Nat. i. 244.—Scolopax Gallinago, Lath. Ind. Ornith. ii.—Scolopax Gallinago, Temm. Man. d'Ornith, ii. 676.—Scolopax Gallinago, Bleater Snipe, MacGillivray, Brit. Birds, iv.

207. Scolopax Gallinula. Jud Snipe.

Tail pointed, of twelve feathers; secondary quills acutely pointed; bill about a fourth longer than the head; a longitudinal black band, slightly variegated with red on the head, and on each side a reddish-white band, in part divided by a dusky line; on the back three longitudinal bands of black glossed with purple and green and variegated with red, and four bands of pale yellowish-red; the sides longitudinally streaked with brown; axillar feathers white, with some faint grey elongated lines.

Male, $8\frac{1}{2}$, $14\frac{1}{2}$, $4\frac{9}{12}$, $1\frac{9}{12}$, $1\frac{1}{12}$, $1\frac{1}{12}$, $\frac{2}{12}$.

This species arrives in the end of October, and departs in March and April. It is generally dispersed over the country, residing in marshy places, by the margins of rivers and lakes, in ditches, and, in short, in the same places as the common snipe. It is seldom that several individuals are seen together, and it is not nearly so numerous as the species just mentioned. On being flushed it flies off low, without emitting any cry, until about sixty or eighty yards off, when it rises, proceeds a short way, and comes down with rapidity in the first suitable place that occurs. Its flesh is equally esteemed with that of the other.

Jack Snipe. Judcock. Jid.

Scolopax Gallinula, Linn. Syst. Nat. i. 244.—Scolopax Gallinula, Lath. Ind. Ornith. ii. 715.—Scolopax Gallinula, Temm. Man. d'Ornith. ii. 678.—Scolopax Gallinula, Jud Snipe, MacGillivray, Brit. Birds, iv.

GENUS CVIII. RUSTICOLA. WOODCOCK.

This genus, of which only one species is known to me, differs little from Scolopax. The body is fuller, the neck rather short, the head oblong, compressed, and rounded

above. Bill half as long again as the head, straight, slender, tapering, subtrigonal, and higher than broad at the base, slightly depressed toward the end; upper mandible with the groove extending almost to the tip, which is blunt and a little declinate; lower mandible with the intercrural space very long and narrow, the sides grooved and sloping outwards, the tip thin and rounded. Mouth very narrow; tongue long and slender; œsophagus narrow; stomach muscular; intestine of moderate length and width; cœca rather short and cylindrical. Nostrils linear-oblong, basal. Eyes large and placed high. Legs short; tibia feathered to the joint; tarsus short, compressed, scutellate; hind toe very small and elevated, fore toes moderate, free, compressed, the lateral nearly equal, all scutellate in their whole extent; claws small, compressed, little arched. Plumage close and firm, the feathers oblong and rounded; wings of moderate length, broad, rather convex, broadly pointed, the first quill longest, the next almost equal, the rest rather slowly decreasing; inner secondaries broad, and little elongated; tail short, tapering, of twelve feathers.

Habits essentially similar to those of the Snipes.

208. Rusticola sylvestris. European Woodcock.

Plumage of the upper parts variegated with black, light red, and reddish-yellow; of the lower reddish-white, with narrow, transverse, undulating bands of dusky brown; forehead light grey, hind-head with broad transverse black bands.

Male, $13\frac{1}{2}$, 24, $7\frac{9}{12}$, $2\frac{8}{12}$, $1\frac{4}{12}$, $1\frac{5}{12}$, $\frac{5}{12}$. Female, 14.

Arrives from the northern parts of the continent in the beginning of October, and is generally dispersed in Britain and Ireland, frequenting marshy places, brooks, and ditches, generally in woods or thickets, or by hedges. Its flight is more direct and sedate than that of the snipes. Being in the highest estimation as an article of food, it is shot in great numbers. Many pairs have of late years bred in the country; but the number of those that remain in summer is very small compared with that of the emigrant individuals which take their departure in March and April. It is almost wonderful that so many should escape, seeing the number of dogs, guns, and gins, that are employed to capture them. It resorts to

the northern parts, where it breeds, depositing in a slight hollow its four eggs, which are an inch and three-fourths in length, an inch and a third in breadth, yellowish-white, clouded and spotted with grey and reddish-brown. The female is considerably larger than the male, and both sexes vary a good deal in their tints. The species is extensively distributed, but does not occur in North America, the "woodcock" of which is smaller, and belongs to a different genus.

Scolopax Rusticola, Linn. Syst. Nat. i. 243.—Scolopax Rusticola, Lath. Ind. Ornith. ii. 713.—Scolopax Rusticola, Temm. Man. d'Ornith. ii. 673.—Rusticola sylvestris, Woodcock, MacGillivray, Brit. Birds, iv.

Among the birds usually named Waders, Grallæ, or Grallatores, we have seen that there are some which generally inhabit sandy deserts, and therefore have little opportunity of wading, even if they had the inclination; but of these, the Ostriches, none occur in Britain, or even in Europe. Others, the Bustards and other allied species, frequent dry pastures and ploughed fields, and are by no means remarkable for wading, any more than many of the Plover tribe, most of which, however, have no hesitation in running out into shallow water. Then followed the Tringinæ, Totaninæ, and Scolopacinæ, all of which are marsh or shore birds, and obtain their food by probing the mud and wet sands. We now come to a group differing considerably in form and structure from all these, frequenting marshy places, and even swimming habitually, some of them being as truly aquatic in their habits as the Natatores, but all running also on land, and that with great speed. These birds, for which I adopt Mr Blythe's name of Skulkers, Latitrices, are very nearly allied to the Perdicinæ and some other Gallinaceous birds. They form an order, of which, however, only a single family exists, it being very inexpedient to separate the slender-billed Rails from the thick-billed Gallinules, especially as the number of species is not very great, and those which occur in Britain few.

ORDER XV. LATITRICES. SKULKERS.

Viewed collectively, the birds of this order bear a general modified resemblance to the Perdicinæ, and some other Gallinaceous birds. Our Corn Crake, for example, is not very unlike some Quails and Partridges; and our Water-Hen has been so named, on account of its manifest similarity to the female of the domestic fowl. The genera of which it is composed, namely, Palamedea, Opistolophus, Megapodius, Parra, Gallinula, Porphyrio, Ortygometra, Rallus, and Aramus, may perhaps be arranged into several groups analogous to the families of the preceding order. But the few species which occur in Britain, although they differ greatly in the elongation of the bill and claws, clearly belong to a single group, to which the name of Gallinulinæ may be given. The general characters of the Latitrices are the following:—Body much compressed; neck moderate; head small, oblong, much compressed. Bill compressed, rather strong, with a rather large nasal sinus. Mouth narrow; œsophagus without crop; stomach a very muscular gizzard; intestine of moderate length and width; cœca rather large. Trachea with a single pair of inferior laryngeal muscles. Nostrils generally small, as are the eyes. Feet generally very large; the toes four, the first small, the anterior very elongated, compressed, slender, scutellate, sometimes margined or even lobed; claws slender, long, tapering, little arched. Plumage firm; wings short or moderate; tail very small.

These birds inhabit marshes, moist meadows, the sides of lakes and rivers; make their way with ease among the tall herbage, from which they are not easily raised; have a heavy but rather quick flight, during which they extend their feet backwards; form a bulky nest on the ground, and lay numerous ovate or oblong spotted eggs. They are more numerous in warm climates, but are generally distributed.

FAMILY XXXVIII. GALLINULINÆ. GALLINULINE BIRDS, OR WATER-HENS.

Body large, much compressed; neck of moderate length; head small, oblong, compressed. Bill moderately stout, and of ordinary length, but varying from short to long, always compressed, and rather strong, with the point narrow, but obtuse. Both mandibles concave within, the lower more deeply; the palate flat, and papillate; tongue fleshy, oblong or slender, with a few short papillæ at the base, the tip thin, obtuse, and lacerate; œsophagus of moderate capacity, without crop or remarkable dilatation; proventriculus oblong; stomach a powerful gizzard, like that of a Gallinaceous bird, with very large, distinct muscles, and thick rugous epithelium; intestine long, of moderate width; cœca long; rectum dilated into an elliptical or globular cloaca. Nostrils direct, pervious, in the fore and lower part of the nasal groove. Eyes rather small, eyelids feathered. Aperture of ear roundish, and rather small. Legs stout; tibia bare to a considerable extent; tarsus large, compressed, anteriorly scutellate; toes very long, slender, free; the first very small, the anterior long, the inner shorter than the outer; claws generally long, little arched or straight, compressed, acute. Plumage blended, but firm, on the head very short; the

feathers oblong, narrow, rounded; wings rather short, moderately convex, broad and rounded, of about twenty-four quills; the inner secondaries long and pointed; tail very short, much rounded, of twelve narrow, decurved, weak feathers.

The skeleton of the Gallinulinæ more resembles that of the Partridges than of any other tribe; but the whole form is more compressed, and the sternum of very singular construction, being of moderate length, anteriorly of ordinary breadth, but narrowing backwards, so as to end in a point, and from before the middle on each side sending out a very long lateral process. These birds are generally distributed, some species being found in every part of the globe. Residing among reeds, sedges, rushes, flags, or other aquatic plants, they are peculiarly fitted by the extreme compression of their body for making their way among the herbage, and by the great length of their toes and claws for supporting themselves upon the stalks or blades of vegetables floating upon the water or growing out of it. They float lightly, and, with the exception of a few species, swim with ease; but fly heavily, with their legs at first dangling, and afterwards stretched out behind them. In open places they run with great speed, and in their ordinary walk advance in a sedate manner, raising their feet high. Many of them have frontal plates or appendages of a vascular tissue, covered by the ordinary integuments or by a horny cuticle, and becoming more tumid, and often more highly coloured in the breeding season. The nest is bulky, and placed on the ground; the eggs numerous, oval, light coloured, and spotted, dotted, or speckled with dusky. The young, covered with long, generally black down, run and swim immediately after birth. The food is various, consisting of seeds, herbage, worms, insects, and mollusca.

GENUS CIX. RALLUS. RAIL.

Birds of small or moderate size, having the body much compressed; the neck rather long and slender; the head small, oblong, much compressed. Bill longer than the head, slender, much compressed, high at the base, very slightly arcuate; upper mandible with its dorsal line slightly declinate at the base, straight in the middle, a little declinate toward the end, the ridge convex, having a slightly enlarged angular commencement, the sides nearly erect, the edges sharp, hard, and slightly inflected; lower mandible with the angle extremely long and narrow, the dorsal line nearly straight, the edges slightly inflected, the tip narrow, but obtuse; the gape-line almost straight. Mouth very narrow; tongue very long, slender, trigonal, emarginate and papillate at the base, canaliculate above, tapering to a bristly point; œsophagus narrow; proventriculus oblong; stomach roundish, with the lateral muscles very prominent, the epithelium dense, rugous, with oblong flat grinding plates; intestine of moderate length and width; cœca long, very narrow for half their length, gradually enlarged and oblong; cloaca globular. Eyes small, eyelids feathered. Nostrils sub-basal, linear, pervious. Aperture of ear small. Feet large; tibia bare for a short space; tarsus of moderate length, compressed, anteriorly covered with broad, curved scutella; toes very long, slender, much compressed; the first proportionally small, the second considerably shorter than the fourth, all scutellate; claws long, slender, tapering, slightly arched, much compressed, acute. Plumage blended; feathers of the fore-head with strong bristle-points, of the body oblong and broadly rounded; wings short, concave, rounded, of twenty-two quills; the first much shorter than the second, which is about the same length as the third; tail extremely short, arched, much rounded, of twelve very weak feathers.

The Rails inhabit the reedy and grassy margins of lakes and rivers, where they habitually conceal themselves; feed on worms, mollusca, small crustacea, insects, seeds of gramineæ and other plants; are capable of swimming, and even of diving; and in form and habits make some approxima-

tion to the Snipes, from which they scarcely differ in their digestive organs.

209. Rallus aquaticus. Water Rail.

Plumage above olivaceous, streaked with brownish-black; fore-neck and breast dull greyish-blue; sides and haunches barred with brownish-black and white; abdomen pale reddish-yellow, proximal lower tail-coverts white, the rest banded with black; bill dark brown, with the edges of the upper and two-thirds of the lower mandible bright red; feet light reddish-brown, approaching to flesh-colour. Female similar, but with the tints paler, the red of the bill less bright, and the legs tinged with green.

Male, $11\frac{3}{4}$, 16, 5, $1\frac{9}{12}$, $\frac{17}{12}$, $1\frac{11}{12}$, $\frac{4}{12}$. Female, $10\frac{1}{2}$, $15\frac{1}{2}$.

Although generally distributed in Britain, and permanently resident, the Water Rail is nowhere common. It frequents moist meadows, the sides of ditches, brooks, or streams overgrown with sedges, seeds, and other rank plants, as well as marshes, especially those abounding with the yellow iris. When forced to take wing, it flies slowly, and seldom proceeds far; but it runs with great celerity. Its food consists of worms, slugs, helices, lymneæ, insects, and seeds of gramineæ. The nest is bulky, and contains from six to twelve eggs, which are oval, cream-coloured, spotted with red and pale grey.

Bilcock. Runner. Skit. Skiddy Cock.

Rallus aquaticus, Linn. Syst. Nat. i. 262.—Rallus aquaticus, Lath. Ind. Ornith. ii. 755.—Rallus aquaticus, Temm. Man. d'Ornith. ii. 683.—Rallus aquaticus, Water Rail, MacGillivray, Brit. Birds, iv.

GENUS CX. CREX. CRAKE.

Birds of small size, having the body much compressed, the neck of moderate length; the head rather small, oblong, compressed. Bill shorter than the head, rather stout, compressed, tapering; upper mandible with the dorsal line sloping and nearly straight, declinate, and a little convex toward the end, the ridge convex, having a slightly enlarged angular commencement, the sides nearly erect, toward the end a little convex, the edges sharp, hard, and slightly inflected, with a very slight notch or sinus close to the tip, which is rather obtuse; the nasal sinus broad, and extend-

ing to beyond the middle; lower mandible with the angle long and very narrow, the dorsal line ascending, the edges slightly inflected, the tip narrow, but obtuse; the gape-line straight. Mouth very narrow; tongue short, or of moderate length, slender, emarginate and papillate at the base, flat above, with the point narrow but rounded; œsophagus narrow; proventriculus oblong; stomach roundish, with the lateral muscles very large, the epithelium dense, rugous, with oblong flat grinding surfaces; intestine of moderate length and width; cœca long, narrow. Eyes small; eyelids feathered. Nostrils sub-basal, linear, pervious. Aperture of ear small. Feet large; tibia bare for a short space; tarsus rather long or moderate, compressed, anteriorly covered with broad, curved scutella; toes long, slender, much compressed; the first proportionally very small, the second a little shorter than the fourth, all scutellate; claws rather long, slender, tapering, slightly arched, much compressed, acute. Plumage blended, firm or stiff; feathers of the forehead with strong bristle-points, of the body oblong, and broadly rounded; wings short or moderate, concave, rounded, of twenty-four quills; the first much shorter than the second, which is longest, or equal to the third; tail extremely short, arched, much rounded, of twelve very weak feathers.

These birds differ from the Rails chiefly in having the bill shorter and stouter, and the body somewhat fuller. No two species agree precisely in the form of the bill. The tarsi and toes also vary considerably in length. On some slight differences of this nature authors have founded several genera; but on the same principle, every species must make a genus. As defined above, the genus is easily recognised in every specific form. The Gallinules inhabit meadows, corn-fields, marshes, and, in general, places covered with a rank growth of gramineæ and cyperaceæ. They run with great speed, but fly in a heavy manner; feed on insects, worms, mollusca, and seeds. Most of them swim and dive with ease; but some, and especially our most common species, confine themselves to dry places. The nest is large, and the eggs numerous, oval or oblong, light coloured, and spotted. The young are at first covered with black down.

210. Crex pratensis. Corn Crake.

Plumage of the upper parts dull yellowish-red, streaked with brownish-black; wing-coverts light red, some of them imperfectly barred with white; lower parts pale yellowish-red, the throat and abdomen brownish-white; the sides and breast barred with light red and white; the lower wing-coverts and axillar feathers light red; bill light brown, feet flesh-coloured.

Male, $10\frac{3}{4}$, 18, 6, $\frac{11}{12}$, $1\frac{6}{12}$, $1\frac{6}{12}$, $\frac{3}{12}$. Female, $10\frac{1}{2}$, $17\frac{1}{2}$.

This species, which, although seldom seen, is often heard, arrives in the beginning of summer, and departs early in September. It is generally distributed, occurring in abundance in the most northern parts of Scotland and its islands, as well as in England. Its well known cry of *Crek-crek*, repeated often for a long time in continuance, or at intervals, and heard as if at varying distances, is emitted while the bird is standing in a half-crouching attitude, with the neck moderately extended. The ordinary haunts of this species are fields of corn and grass, and in the less cultivated parts of the country the large patches of yellow iris, and other tall herbaceous plants which occur in moist places. It prefers dry or moderately moist to wet ground, and does not betake itself to marshes, although it is often met with by the sides of brooks. Its food consists of insects, worms, slugs, and sometimes seeds. It is strictly diurnal in its habits, but may be heard late at night and before dawn. Its cry is well imitated by rubbing the thin edge of a bone, the rib of a horse or cow, upon the notched edge of another, and in this way it may be enticed within shooting distance. Its nest is composed of a few straws, laid in a slight hollow, among corn, grass, or tall weeds. The eggs of an elongated oval form, light cream-colour, patched, spotted, and dotted with brownish-red and light purplish-grey, and generally about eight or ten, two inches and one-twelfth in length, an inch and four-twelfths in breadth. The young, covered with down of a blackish colour, run with surprising speed. Toward the middle of July it ceases to utter its cry. I have seen young birds remaining until the end of September, and instances of their having been shot in winter have occurred in various parts of the country. The flesh is white, and affords delicate eating.

Corn Crake. Land Rail. Land-hen. Daker-hen. Corn Cracker.

Rallus Crex, Linn. Syst. Nat. i. 261.—Gallinula Crex,

Lath. Ind. Ornith. ii. 766.—Gallinula Crex, Temm. Man. d'Ornith. ii. 686.—Crex pratensis, MacGillivray, Brit. Birds, iv.

211. Crex Porzana. Spotted Crake.

About a third less than the Crake Gallinule; with the bill nine-twelfths in length, brownish-yellow, dull orange at the base; the feet yellowish-green; the upper parts olive-brown, with oblong black spots, and numerous white specks margined with black, those on the scapulars being linear and longitudinal, on the inner secondaries transverse; a greyish-blue band dotted with white over the eye; the fore part and sides of the neck greyish-olive, spotted with dull white; the sides of the body olivaceous, barred with white and black, the axillars and lower wing-coverts white, barred with black, the lower tail-coverts pale buff.

Male, $9\frac{1}{4}$, $15\frac{1}{2}$, $4\frac{8}{12}$, $\frac{9}{12}$, $1\frac{4}{12}$, $1\frac{1}{4}$, $\frac{3}{12}$.

This species resides in marshes and by the grassy margins of streams and pools, searching among the herbage for its food, and betaking itself to the water on occasion. It runs and skulks like the other species, flies heavily, forms a bulky nest, often surrounded with water, and lays from seven to ten ovato-oblong eggs, an inch and a fourth in length, pale reddish-grey, spotted with umber or reddish-brown, and brownish-grey. In autumn, according to Mr Selby, its body becomes covered with a thick subcutaneous layer of fat, and its flesh is well flavoured. The young differ little from the adult.

Spotted Rail. Water Rail, or Water Hen. Skitty.

Rallus Porzana, Linn. Syst. Nat. i. 262; Gallinula Porzana, Lath. Ind. Ornith. ii. 772.—Gallinula Porzana, Temm. Man. d'Ornith. ii. 688.—Crex Porzana, Spotted Crake, MacGillivray, Brit. Birds, iv.

212. Crex Baillonii. Baillon's Crake.

Length, seven inches; bill along the ridge eight-twelfths, dark green; feet olivaceous; upper parts olive-brown, with oblong black spots, and numerous elongated white markings edged with black; a band over the eyes, the cheeks, throat, fore part and sides of the neck, with the breast, bluish-grey; the sides of the body and lower tail-coverts barred with black and white. The female similar, but with the tints paler. Young with the throat and part of the abdomen white, the

cheeks, fore-neck and breast brownish-white, with faint transverse brown bars.

Male, 7, . ., $3\frac{5}{12}$, $\frac{8}{12}$, $1\frac{1}{12}$, $1\frac{3}{12}$, $\frac{3}{12}$.

This species, which is said to be common in the southern and eastern parts of Europe, ranks with us as a very rare and accidental visitant. In January 1823 an individual was caught in Cambridgeshire, and is preserved in Dr Thackeray's collection.

Gallinula Baillonii, Temm. Man. d'Ornith. ii. 692.—Baillon's Crake, Crex Baillonii, Jard. and Selby's Illustr. pl. 15. —Crex Baillonii, Baillon's Crake, MacGillivray, Brit. Birds, iv.

213. Crex pusilla. Little Crake.

Length seven inches and three-fourths; bill along the ridge eight-twelfths and a half, more slender than in the last species, yellowish-green; feet light green; upper parts olive-brown, spotted with dusky, and having on the back a few white streaks; a band over the eye, cheeks, and lower parts in general bluish-grey; the sides faintly barred with white and brown, lower tail-coverts black, barred with white. The female differs in having the throat whitish, the grey tint of the lower parts paler and tinged with red; the upper parts reddish-brown. The young still paler beneath, being brownish-white on the cheeks and neck, the sides brown, with faint whitish bars.

Male, $7\frac{3}{4}$, . ., $3\frac{10}{12}$, $\frac{9}{12}$, $1\frac{2}{12}$, $1\frac{4}{12}$, $\frac{3}{12}$.

Of very rare and accidental occurrence in England, in several parts of which it has however been obtained. In its habits it resembles the two preceding species, and is said to be plentiful in the eastern parts of Europe.

Rallus pusillus, Lath. Ind. Ornith. ii. 761.—Gallinula pusilla, Temm. Man. d'Ornith. ii. 690.—Crex pusilla, Little Crake, MacGillivray, Brit. Birds.

GENUS CXI. GALLINULA. WATER-HEN.

The Water-Hens differ in no very essential respects from the Gallinules, their principal distinction being their having a kind of callosity or plate on the forehead at the base of the ridge of the upper mandible, and their toes flat beneath and laterally margined. They are birds of moderate or small size, having the body large, but much compressed;

the neck of moderate length; the head small, oblong, compressed. Bill not exceeding the head in length, rather stout, tapering, much compressed; upper mandible with the dorsal line slightly declinate, towards the end convex, the ridge narrow, but at the base considerably enlarged, and forming a soft, tumid, oblong plate, which varies in extent, sometimes extending to the crown of the head, the sides sloping, toward the end erect and convex, the edges direct, the tip somewhat deflected, with very slight notches; the nasal groove large; lower mandible with the angle long and very narrow, the dorsal line very short and ascending, the sides nearly erect, the edges sharp, and a little inflected toward the end, the tip narrow, and rather sharp. Tongue fleshy, oblong, nearly flat above, with the tip thin, rounded, and slightly lacerate; œsophagus uniform; proventriculus oblong; stomach a large, very muscular gizzard, with rugous epithelium; intestine very long; cœca large, cylindrical. Nostrils linear-oblong, submedial. Eyes rather small, eyelids feathered. Aperture of ear rather small, roundish. Feet large; tibia bare to a small extent; tarsus of moderate length, large, compressed, anteriorly with broad curved scutella; toes very long, slender, compressed, above with numerous scutella, beneath flattened and distinctly marginate; the first very small, the third longest, the fourth a little longer than the second; claws long, slender, slightly arched, compressed, acute. Plumage blended, soft, glossy above; wings short, concave, rounded, of twenty-two quills; the first primary considerably shorter than the second, which is longest; tail very short, arched, much rounded, of twelve weak, narrow feathers.

The species of this genus inhabit meadows, marshes, and swampy places on edges of rivers, lakes, or inlets of the sea, covered with reeds, sedges, and other strong herbage. They run with great speed, but fly heavily; feed on worms, mollusca, insects, and seeds; swim and dive with ease; form a large nest, generally on the ground, among reeds, and lay from five to eight or ten light-coloured eggs, spotted with dusky.

214. Gallinula Chloropus. Green-footed Gallinule.

Plumage of the head, neck, and lower parts dark grey, of the back and wings deep olive-brown; edge of the wing and lower tail-coverts white; oblong frontal plate and bill to beyond the nostrils crimson-red, the tips greenish-yellow; feet dull green, with a ring of bright red on the tibia. Young similar, but with the frontal plate small, and the feathers of the lower parts edged with white.

Male, 13, 22, 7, $1\frac{3}{4}$, 2, $2\frac{4}{12}$, $\frac{7}{12}$. Female, $12\frac{1}{2}$, $20\frac{1}{2}$.

This bird is found in all parts of Britain and Ireland that are adapted to its nature; that is, in marshy places, pools, lakes, still streams, mill-dams, and even ditches, where it searches for food chiefly among the reeds and other aquatic plants along the shores. It swims with great ease and elegance, sitting lightly on the water, with its neck erect, and its tail obliquely raised; dives with equal facility, and on land runs with great speed. When surprised it dives and remains concealed with only the bill above the surface, or hides among the herbage or under a bank. It often perches on stumps or trunks of willows, on which also it sometimes forms its nest, which, however, is usually placed on the ground, among reeds, or in the water, and is very bulky. The eggs, from six to eight or ten, are ovate or nearly elliptical, an inch and three-fourths in length, an inch and a quarter in breadth, pale greyish-yellow, or greyish-brown, dotted and spotted with deep brown. The young, at first covered with long stiff fish, black down, leave the nest soon after they are hatched. The flesh of this species is white, often loaded with fat, and affords tolerably pleasant eating.

Moor Hen. Marsh Hen. Stank Hen.

Fulica Chloropus, Linn. Syst. Nat. i. 258.—Gallinula Chloropus, Lath. Ind. Ornith. ii. 770.—Gallinula Chloropus, Temm. Man. d'Ornith, ii. 693.—Gallinula Chloropus, Green-footed Water-Hen, MacGillivray, Brit. Birds.

GENUS CXII. FULICA. COOT.

The Coots differ from the Gallinules chiefly in having the toes furnished with a broad scolloped membrane. They are of moderate size, with the body compressed, but full; the neck of ordinary length; the head rather small, and compressed. Bill not exceeding the head in length, stout, taper-

ing, much compressed; upper mandible with its dorsal line declinato-convex, the ridge narrow, enlarged at the base into an elliptical tumid plate, which covers the fore part of the head to beyond the eyes, the sides sloping at the base, convex toward the end; the nasal groove large, the edges hard and direct, the tip small, with rather distinct notches; lower mandible with the angle long and narrow, the dorsal line ascending, and nearly straight, the edges direct, the tip narrow. Tongue fleshy, oblong, nearly flat, with the tip thin, rounded, and lacerated; œsophagus uniform; proventriculus oblong; stomach a large, very muscular gizzard, with rugous epithelium; intestine very long; cœca large. Nostrils linear-oblong, submedial. Eyes rather small, eyelids feathered. Aperture of ear roundish, rather small. Feet large; tibia bare to a small extent; tarsus of moderate length, large, compressed, with broad curved scutella; toes very long, slender, compressed, above with numerous scutella, beneath flat, laterally expanded into a broad membrane, which is contracted at the joints, each scollop, thus formed, having five series of plates; the first toe small, the second a little larger than the fourth; claws long, slender, much compressed, tapering, acute. Plumage soft, full, blended, glossy above; wings short, concave, rounded, of twenty-four quills; the first primary considerably shorter than the second, which is about the same length as the third; tail extremely short, arched, much rounded, of twelve very weak, narrow feathers.

The Coots are proportionally stouter than the Gallinules, and decidedly aquatic. Their residence is on lakes, pools, rivers, and inlets of the sea, among the reeds, sedges, and other aquatic plants. They occasionally betake themselves to land, and can run with great speed, but fly heavily; swim and dive with as much ease as ducks; feed on insects, mollusca, worms, and seeds; form a large nest, on the ground, among seeds, and lay numerous light-coloured eggs, dotted with dusky.

215. Fulica atra. Black Coot.

Plumage of the head and upper part of the neck greyish-black; the upper parts dark bluish-grey, the lower brownish-grey; the frontal plate white, as are the extremities of the

mandibles, their base being pale red; feet bluish-grey, with an olivaceous-orange ring on the tibia. Young with the upper parts dark greyish-green, the lower dull brownish-grey. Grey or brownish individuals are sometimes met with.

Male, 16, 22, $8\frac{3}{4}$, $2\frac{1}{4}$, $1\frac{2}{12}$, $2\frac{11}{12}$, $\frac{7}{12}$.

The Coot is generally distributed in Britain, but in winter retires to the southern parts. Its favourite places of resort are large pools, lakes, or rivers, overgrown or margined with reeds, flags, sedges, water-lilies, and other aquatic plants, among which it is seen swimming in search of its food, which consists of seeds, fresh blades of grass, mollusca, and worms. Sometimes it makes excursions into the neighbouring fields, when it runs and walks precisely in the manner of the water-hen. It floats lightly on the water, swims sedately, jerking its tail; dives with ease, and eludes pursuit by retreating beneath the surface of the water, to emerge in a concealed part. In summer it emits a very loud, abrupt cry, resembling the note of a trumpet. The nest is extremely large; the eggs, from six to ten, elongated oval, light yellowish-grey, dotted with brownish-black, two inches and a twelfth long, an inch and five-twelfths in breadth. The young are covered with black down tipped with white, the hind part of the head yellow, the frontal membrane blood-red.

Bald Coot. Bald Duck.

Fulica atra, Linn. Syst. Nat. i. 257.—Fulica atra, Lath. Ind. Ornith. ii. 777.—Fulica atra, Temm. Man. d'Ornith. ii. 706.—Fulica atra, Bald Coot, MacGillivray, Brit. Birds, iv.

We now come to the last order of the Grallatorial series, composed of slender, long-legged, generally conic-billed birds, addicted to wading, and, without exception, essentially aquatic or littoral. Although several of them greatly resemble some of the Cursitrices in form, they are unable to run with the same ease, their feet being differently formed, but advance with a slow and sedate motion, whence the name of Stalkers, not inaptly applied to them by Mr Blythe. They are more truly piscivorous than the birds of the other groups, and their stomach accordingly differs in being thin or membraneous, while their gullet is wide, and their intestine elongated and very narrow.

ORDER XVI. AUCUPATRICES. STALKERS.

Birds of large or moderate size, having the body much compressed and light; the neck very long and slender; the head oblong, compressed, and flattened above; the bill large, generally conical, but varying considerably in form; the legs long; the tibia bare to a large extent; the tarsus scutellate; the toes four, the hind toe large, and on the same plane with the rest. The wings are large and broad; the tail short. They live on fishes, crustacea, reptiles, and other aquatic animals, swallowing their food entire; frequent the shores of the sea, estuaries, rivers, lakes, and marshes; have a light or buoyant, but slow flight; walk in a sedate and graceful manner; form a very large, generally flat nest, which they place on the ground or on trees; and lay few, from two to five elliptical light-coloured eggs. The young, at first scantily covered with down, remain in the nest until fledged.

In this order are two distinct groups, the Ardeinæ and Tantalinæ; the former very distinct from all the other Grallatorial groups; but the latter passing into the Tringinæ, some of them being little distinguishable from Curlews.

FAMILY XXXIX. ARDEINÆ. ARDEINE BIRDS, OR HERONS.

Birds generally of large size, having the body high, but much compressed; the neck long, generally slender;

the head oblong, much compressed, flattened in front. Bill long, straight, stout, tapering, compressed; upper mandible with the dorsal line nearly straight, the ridge broad at the base, narrowed in the rest of its extent, the sides sloping, and more or less convex, the edges thin, the tip acute; lower mandible with the angle very long and narrow, the dorsal line nearly straight, the sides sloping outwards, the edges thin, the tip acuminate. Mouth rather wide, and capable of being much dilated, in consequence of the flexibility of the crura of the lower jaw; palate anteriorly with two papillate ridges, and a median prominent line running to the point of the mandible; tongue long, slender, trigonal, tapering, sagittate at the base, with a large pointed papilla on each side, the tip acute; œsophagus very wide in its whole length, as is the proventriculus, of which the glands form a broad belt, having at its upper margin numerous large crypts in groups; stomach a very large rounded sac, having the muscular coat extremely thin, the inner soft, and also very thin; a globular pyloric lobe; intestine very long, and extremely narrow; at the commencement of the rectum an oblong small cœcum, but no lateral appendages; cloaca very large, and globular. Trachea considerably flattened, and gradually narrowed; the last four wings halved; a single pair of inferior laryngeal muscles, extending from the lateral muscles to the last ring; bronchi wide, with large membranes. Eyes of moderate size, generally surrounded by a bare space. Nostrils linear, nasal membrane small. Aperture of ear small, and roundish. Tibiæ very long, generally bare to a great extent; tarsi long, and rather stout; toes four, long, scutellate above; the first slender, and nearly on a level with the anterior; claws short, or moderate, arched, compressed, and pointed. Plumage generally full, but not close; feathers on the lower part of the neck, fore part of the back, and scapulars, elongated; wings very large,

broad, somewhat rounded; tail short, of twelve or ten weak feathers.

The Ardeinæ are essentially piscivorous, but also feed on crustacea, mollusca, worms, insects, occasionally reptiles, small quadrupeds, and young birds. They walk sedately, often gracefully, wade into shallow water, seize their prey with a sudden jerk of the head, and generally swallow it entire. Their voice is a harsh grating scream, or a guttural croak. They nestle on the ground, or on trees, often in large communities, and lay from two to five eggs of a light greenish-blue colour. Species occur in all countries, but are more numerous toward the equator. Only one is common in Britain, but eleven others occur there, most of them as accidental or occasional visitants.

GENUS CXIII. BOTAURUS. BITTERN.

The Bitterns are generally distinguishable by the extreme compression of their body; their shorter legs, and proportionally longer claws; the great elongation of the feathers of the neck, which is bare behind in nearly its whole length; their oblong, extremely compressed head, and very slender, straight bill. The latter is longer than the head, compressed, tapering to a fine point; the upper mandible with the dorsal line almost straight, the ridge flattened for a short space, then narrow, the nasal groove deep, and extending to near the end, the sides convex, the edges sharp, serrulate, with a notch close to the acute top; lower mandible with the angle very long and extremely narrow, the dorsal line almost straight and slightly ascending, the sides slightly concave and nearly erect, the tip acuminate; the gape-line straight, unless at the base. Tongue long, slender, trigonal; œsophagus very wide; stomach roundish, with the walls very thin, and a round pyloric lobe; intestine long, narrow; an oblong cœcal head; cloaca globular. Nostrils linear. Eyes large. Aperture of ear rather small. Legs of moderate length; tibia bare for a short space; tarsus with very broad

anterior scutella; toes long, stout, scutellate above, the first strong, the second much longer than the fourth, which is connected with the third by a small basal web; claws long, slender; that of the first toe stouter and more arched, of the middle toe with the inner edge pectinate. Plumage very full and soft; feathers of the sides and lower part of the neck much elongated, on the former directed obliquely backwards, so as to cover the downy part of the hind-neck; wings large, of twenty-eight quills, of which the third and second are longest; inner secondaries nearly as long; tail very short, nearly even, of ten soft feathers.

The Bitterns inhabit marshy places, in which, in a hideling manner, they search for reptiles, fishes, and other aquatic animals. The males, in the breeding season, make a loud booming or bellowing noise. The eggs, from three to five, are elliptical, and of one colour, generally grey, olivaceous, or white. The nest is placed on the ground, and the young remain in it until fledged. Some of the smaller species approach the Rails in form and habits.

216. Botaurus stellaris. European Bittern.

Length about thirty inches; one inch of the tibia bare. Adult light reddish-yellow, with the upper part of the head, and the greater portion of the scapulars purplish-black, the rest of the upper parts transversely variegated with dusky; the lower parts paler, with the markings on the fore-neck larger and more brown, those along the middle of the breast black and longitudinal. The young are similar to the adult.

Male, 30, 46, $13\frac{1}{2}$, 3, $3\frac{5}{12}$, $3\frac{4}{12}$, $1\frac{5}{12}$.

This species, which appears to have formerly been plentiful in England, is now of rare occurrence in any part of Britain, and especially in Scotland. It occurs occasionally in the less frequented marshes and moors, and is permanently resident. The male makes a singular bellowing noise. The nest is formed of sedges and other plants, and the eggs, four or five, are elliptical, and olivaceous-grey. It is with difficulty started, flies slowly, and soon alights. Its food consists of small fishes, frogs, lizards, and insects. The bronchi, although wide, scarcely exceed those of any other birds of this family.

Bittern. Mire-drum. Bumpy Coss. Bitter-bump. Bog-bumper. Bumble.

Ardea stellaris, Linn. Syst. Nat. i. 239.—Ardea stellaris, Lath. Ind. Ornith. ii. 680.—Ardea stellaris, Temm. Man. d'Ornith. ii. 580.—Botaurus stellaris, European Bittern, MacGillivray, Brit. Birds, iv.

217. Botaurus lentiginosus. Freckled Bittern.

Length about twenty-six inches; one inch of the tibia bare. Adult with the upper part of the head greyish-brown; a light yellowish streak over the eye, a dusky streak from behind it; a broad band of brownish-yellow from the cheek to the nape, and beneath it an oblique band of black; the upper parts of the body variegated with yellowish-brown, dark-brown, and reddish, the margins of the feathers closely undulated and transversely barred; the throat white, with brown markings; the fore part of the neck, and the lower parts of the body pale yellowish, with numerous elongated streaks of reddish-brown, dotted and edged with darker. Young similar, but with the colours darker.

Male, 26, 45, $12\frac{1}{2}$, $3\frac{2}{16}$, $3\frac{3}{4}$, $3\frac{2}{16}$, $\frac{1}{2}\frac{1}{2}$.

This Bittern, which is common in North America, occurs in Europe only as a very rare straggler. Montagu described the only one hitherto certainly found in England. It was shot in the parish of Piddletown, in Dorsetshire, in the autumn of 1804.

Freckled Heron. American Bittern.

Ardea lentiginosa, Mont. Ornith. Dict. Supper.—Ardea mokoho, Wagler, Syst. av.—Ardea minor, Wilson, Amer. Ornith. viii. 35.—Ardea lentiginosa, Temm. Man. d'Ornith. iv. 381.—Ardea lentiginosa, Freckled Bittern, MacGillivray, Brit. Birds, iv.

218. Botaurus minutus. Little Bittern.

Length about fourteen inches; tibia entirely feathered. Male with the upper part of the head, the back, scapulars, and tail, glossy greenish-black; the sides of the head, the neck, lower parts, and smaller wing-coverts light reddish-yellow. Female similar, but with the tints less deep. Young with the upper part of the head dark brown, the feathers of the back dark brown, edged with yellow, the fore-neck yellowish-white, streaked with dusky; the sides of the head,

hind part of the neck, wing-coverts, and breast, brownish-red, streaked with dusky and brown.

Male, $14\frac{1}{2}$, 22, $6\frac{1}{4}$, 2, $1\frac{10}{12}$, $1\frac{7}{12}$, $\frac{4}{12}$.

This species, which is very extensively distributed in Europe, Asia, and Africa, is rather of accidental than of regular occurrence in Britain, where it has not hitherto been observed to breed. Dr Fleming makes mention of one that was shot at Sanda, in Orkney; but I am not aware of its having been killed, or even seen, on the mainland of Scotland. In many parts of England, however, it has been frequently procured. It inhabits the swampy sides of lakes and rivers, or wherever there is a rank growth of aquatic plants; and feeds on small fishes, young frogs, newts, aquatic insects, worms, and mollusca. The eggs, four or five, are white, broadly elliptical, an inch and five-twelfths in length.

Boonk. Long-neck.

Ardea minuta, Linn. Syst. Nat. i. 240.—Ardea minuta, Lath. Ind. Ornith. ii. 683.—Ardea minuta, Temm. Man. d'Ornith. ii. 584.—Ardea minuta, Little Bittern, MacGillivray, Brit. Birds, iv.

219. Botaurus comatus. Squacco Bittern.

Bill slender, blue at the base, black at the point; feet greenish-yellow; the whole upper part of the head and nape with long, linear, acuminate, decumbent, pale, yellow feathers, having a black line on the outer edges; the anterior dorsal feathers elongated, with disunited filiform barbs; the upper parts pale reddish-brown; the wings, rump, and tail white; the lower parts pale buff.

Male, 19, . . , 9, $2\frac{5}{12}$, $2\frac{3}{12}$, $2\frac{1}{12}$, $1\frac{6}{12}$.

This species occurs in various parts of Asia, Africa, and the south of Europe. Individuals migrate as far north as Germany, and several have been obtained in the southern counties of England. It has by some been referred to a genus distinct from the Bitterns, to which the name of Buphus has been given.

Ardea comata, Squaiotta, and castanea, Gmel. Syst. Nat. i. 632.—Ardea comata, Squaiotta, and castanea, Lath. Ind. Ornith. ii. 634, 635.—Ardea ralloides, Temm. Man. d'Ornith. ii. 581.—Botaurus comatus, Squacco Bittern, MacGillivray, Brit. Birds, iv.

GENUS CXIV. NYCTERODIUS. NIGHT-HERON.

The Night-Herons are of a more robust form than the Bitterns, to which however they are nearly allied. The body is stoutish, compressed; the head oblong and narrow. Bill scarcely longer than the head, stout, nearly straight, compressed, tapering to a point; upper mandible with the dorsal line straight and declinate for two-thirds, then slightly decurved, the ridge flattened and convex at first, then narrowed, the nasal depression elongated-triangular, with a groove extending to near the end, the edges sharp, with a notch close to the tip, which is acute; lower mandible with the angle very long and very narrow, the dorsal line direct, the sides concave, the edges sharp and serrulate, the tip acuminate; gape-line slightly arched. Mouth rather wide; tongue of moderate length, trigonal, flat above, tapering to a point; œsophagus very wide in its whole length; proventriculus dilated; stomach roundish, compressed, thin, with a small roundish pyloric lobe; intestine long and slender, rectum with an oblong cœcum; cloaca globular. Nostrils linear. Eyes large. Aperture of ear rather small, roundish. Legs long, moderately stout; tibia bare for about a fourth of its length; tarsus moderate, with scutella anteriorly, but hexagonal scales below; toes rather long, scutellate; first stout, second a little shorter than the fourth; claws moderate, arched, compressed, acute, that of the middle toe serrate. Plumage full, soft, blended; feathers on the occiput very long, linear, forming a pendent erectile crest; on the neck rather long, and inclined obliquely backwards; on its lower part in front elongated and rounded; wings broad, of about twenty-six quills; the second and third longest; tail short, even, of twelve broad feathers.

The species of this genus are more active than the Herons, and less graceful in their motions than the Egrets. They feed on reptiles, fishes, and insects; nestle on the ground, or on trees or bushes, laying three or four broadly elliptical pale blue eggs. Only one species is found in Britain. Although named Night-Herons, they do not appear to be more nocturnal than other species.

220. Nycterodius Nycticorax. Grey Night-Heron.

Adult with three white, black-tipped, linear, occipital feathers; the crown and nape, with the fore part of the back and the scapulars, greenish-black; the wings and tail bluish-grey; the lower parts white. Young without elongated occipital plumes; upper part of the head and nape, with the fore part of the back and the scapulars, dull brown, with pale red longitudinal streaks; wing-coverts greyish-brown, with yellowish-white spots; throat and lower parts whitish, tinged with grey, and streaked with brown.

Male, 21, . . , 12, $2\frac{1}{12}$, $2\frac{1}{12}$, $2\frac{4}{12}$, $\frac{7}{12}$.

All the species of this family feed occasionally, if not habitually, by night, and, although the present has been distinguished in this respect from the rest, it is no more a nocturnal prowler than the Bittern or the common Heron. It frequents the margins of lakes, pools, and rivers, preferring those which are plentifully furnished with reeds, sedges, and other aquatic plants. It feeds on reptiles, fishes, mollusca, and worms. Although it is of very rare occurrence in this country, its distribution is very extensive, it being common in many parts of America, as well as in Europe, Asia, and Africa.

Ardea Nycticorax, Linn. Syst. Nat. i. 235.—Ardea Nycticorax, Lath. Ind. Ornith. ii. 678.—Ardea Nycticorax, Temm. Man. d'Ornith. ii. 577.—Ardea Nycticorax, Grey Night-Heron, MacGillivray, Brit. Birds, iv.

GENUS CXV. ARDEA. HERON.

The Herons, properly so called, are among the larger and more robust species of the family to which they give name. Their body is moderately large, but much compressed; the neck very long, and of considerable thickness; the head oblong and much compressed. Bill longer than the head, stout, straight, compressed, tapering to a point; upper mandible with the dorsal line almost straight, the ridge broad and convex at the base, gradually narrowed to the point, the nasal depression narrow, oblong, with a groove extending from it to near the end, the sides convex, the edges sharp, serrulate, with a notch close to the tip, which is very acute; lower mandible with the angle very long and ex-

tremely narrow, the dorsal line ascending and slightly convex, the sides concave, the edges direct, sharp, serrulate, the tip acuminate; gape-line straight. Mouth rather narrow, but extensile; tongue long, slender, trigonal, tapering to a point; œsophagus very wide in its whole length; proventriculus dilated; stomach a hemispherical thin sac, with a round pyloric lobe; intestine very long and extremely slender; rectum with an oblong cœcum; cloaca large and globular. Nostrils linear. Eyes of moderate size. Aperture of ear small, roundish. Legs very long, rather slender; tibia bare for more than a third, covered with hexagonal scales; tarsus very long, anteriorly scutellate; toes very long, scutellate above; the first large, the second a little shorter than the fourth, which is connected with the third by a basal web; claws moderate, arched, compressed, acute, that of the middle toe with a serrate inner edge. Plumage soft and full; feathers on the head elongated and pointed, generally forming a decurved crest; on the neck moderate, on its fore part below elongated and tapering; on the fore part of the back much elongated, with close filaments, separated only toward the end; wings large, the outer four quills nearly even; tail short, nearly even, of twelve feathers.

The species of this genus feed on fishes, frogs, insects, sometimes small mammalia, and young birds; nestle on trees or bushes, sometimes on the ground, laying three or four broadly elliptical light blue eggs; have a sedate, slow but not heavy flight; and are generally shy and suspicious. Two species occur in Britain: one resident, and generally dispersed, the other an accidental visitant.

221. Ardea cinerea. Grey Heron.

Adult with the forehead white, a black, pendent, occipital crest, the fore-neck white, with longitudinal black spots, the upper part and sides bluish-grey, the breast black, with a white patch in front, the abdomen and lower tail-coverts white; the tarsus much longer than the middle toe and claw. Young with the upper part of the head dusky grey, the occipital crest short, the upper parts and sides bluish-grey, the lower white, the fore-neck white with dark spots.

Male, 39½, 72, 18, 4, 6$\frac{1}{12}$, 3½, $\frac{8}{12}$.

The Common Heron frequents the margins of rivers, pools, and lakes, as well as the shores of inlets of the sea, where it may often be observed patiently watching for its prey, or slowly walking among the mud or weeds. Perched on a stone by the water, reposing on one foot, with its neck retracted, it remains motionless for hours, until a fish, or frog, or other object attract its notice, or it be roused by the apprehension of danger. At other times, however, it is seen wandering among the stones, and in the shallows, in quest of small fishes, reptiles, crabs, or shrimps, according to the locality. It also feeds by moonlight, and is said to be in best condition when the moon is full. It is remarkable for its voracity and the rapidity of its digestion. Its flight is sedate, buoyant, but seeming heavy; and in moving to a distance it generally flies high, sailing at intervals. It breeds in society, nestling in high trees. The eggs are from three to five, light bluish-green, broadly elliptical, two inches and a quarter in length, an inch and nine-twelfths in breadth.

Heron. Heronshaw. Crested Heron.

Ardea major and cinerea, Linn. Syst. Nat. i. 236.—Ardea cinerea, Lath. Ind. Ornith. ii. 691.—Ardea cinerea, Temm. Man. d'Ornith. ii. 567.—Ardea cinerea, Grey Heron, MacGillivray, Brit. Birds, iv.

222. Ardea purpurea. Purple Heron.

Middle toe and claw longer than the tarsus. Adult with a longitudinal occipital crest of acuminate decurved feathers; neck longitudinally banded with greenish-black and light red; plumage of the body greyish-blue, dark green, and light red; bill yellow; feet yellow, with the scutella and claws dusky. Young without elongated feathers on the head, back, or fore-neck; the fore-head black, hind-head reddish, fore-neck yellowish-white, spotted with black; feathers of the back dusky grey, margined with light red; legs whitish, bill yellow, with a great part of the upper mandible dusky.

Male, 36, . . , 15½, 5½, 5¼, 4$\frac{7}{12}$, 1$\frac{7}{12}$.

Very extensively distributed in Asia, Africa, and Europe, extending northward as far as Holland, where it is not uncommon. It has several times been obtained in England, where, however, it ranks only as an accidental straggler. The eggs are broadly elliptical, two inches and a twelfth in length, and of a pale greenish-blue colour.

Ardea purpurea, Linn. Syst. Nat. i. 236.—Ardea purpurea, Lath. Ind. Ornith. ii. 697.—Ardea purpurea, Temm. Man. d'Ornith. ii. 570.—Ardea purpurea, Purple Heron, MacGillivray, Brit. Birds, iv.

GENUS CXVI. ERODIUS. EGRET.

The Egrets differ from the Herons chiefly in being of a more slender form, with the neck and legs extremely elongated, and the latter having a larger portion of the tibia bare; the bill more attenuated, with its dorsal line a little deflected toward the end. Many of the species are also furnished with very long dorsal plumes, of which the filaments are disunited. The genus, however, is not well defined, being blended with Ardea on the one hand, and Botaurus on the other. The bill is much longer than the head, strong, but rather slender, straight, compressed, tapering to a point; upper mandible with the dorsal line straight, until toward the end, when it is a little deflected, the ridge broad and convex at the base, gradually narrowed, the nasal depression narrow-oblong, with a groove extending to near the end, the sides convex, the edges sharp, often serrulate, with a notch close to the tip, which is very acute; lower mandible with the angle very long and extremely narrow, the dorsal line ascending and almost straight, the sides concave, the edges direct, often serrulate, the tip acuminate; gape-line straight. Mouth rather narrow, but extensile; tongue long, slender, trigonal, tapering to a point; œsophagus very wide in its whole length; proventriculus dilated; stomach a hemispherical thin sac, with a round pyloric lobe; intestine very long, and extremely slender; rectum with an oblong cœcum; cloaca large and globular. Nostrils linear. Eyes rather small. Aperture of ear small, roundish. Legs extremely long, slender; tibia bare for half its length, or more, covered with hexagonal scales; tarsus very long, anteriorly scutellate; toes long, slender, scutellate above, flattened beneath; the first large, the second a little shorter than the fourth, which is connected with the third by a basal web; claws moderate, arched, compressed, acute, that of the middle toe with a serrated inner edge. Plumage soft and

full; feathers on the head more or less elongated, on the neck short, on its fore part below of considerable length; four longitudinal dorsal series of very elongated feathers, generally having distantly placed filaments, and often extending beyond the tail; wings ample, of about twenty-eight quills, of which the outer three are nearly equal; tail short, nearly even, of twelve feathers.

Many, not all, of these birds are white. They feed on fishes, reptiles, crustacea, insects, small quadrupeds, young birds, and other animals. They are remarkable for their graceful movements, and in activity greatly surpass the Herons. The nest is generally placed on a tree or bush, but sometimes on the ground; the eggs three or four, broadly elliptical, light blue. None of the species are resident in Britain. Egretta being neither Greek nor Latin, I should prefer as the generic name Erodius.

223. Erodius Victoriæ. Queen Victoria's Egret.

Length about three feet and two-thirds; occipital feathers very slightly elongated; dorsal plumes with the shaft stiffish, straight, and extending a little beyond the tail; plumage white, bill black, with the tip dull greenish-grey; bare preocular space verdigris green; feet dingy flesh-coloured, but the tarsal and digital scutella dusky.

Were the descriptions of authors so detailed as those in my History of British Birds, one might easily refer to its species any individual bird that he might obtain; but this is by no means the case, insomuch that even the most recent works, namely, those of Mr Gould and Mr Yarrell, contain descriptions and figures of the Great White Egret so imperfect as to be useless for comparison with very nearly allied species. That bird has the shaft of the dorsal plumes straight, and yet they are represented in both works as arcuate or decurved, but in Mr Gould's with the tip a little recurvate. The bill in both works is bounded by right lines, which is not the case in any Egret known to me. The descriptions are, I regret being obliged to say it, good for nothing.

In the summer of 1840, I obtained a most beautiful adult male white Egret, which was shot by Mr Martin, gamekeeper to the Earl of Haddington, on Tyningham Sands, in East Lothian, on the 9th of June, and having been sent to Mr Mac-

duff Carfrae to be prepared, was minutely examined by me. A very full description does not accord with the plan of this work, and will be given elsewhere; but enough may be stated here to shew the difference between Erodius Victoriæ, E. albus, and E. Egretta, which are very intimately allied.

Erodius Victoriæ is much larger in all its dimensions than E. albus, which exceeds E. Egretta. The bill is long, stout, compressed, tapering; the upper mandible with the dorsal line straight for two-thirds, then slightly declinato-convex, the ridge broad at the base, narrow but convex in the rest of its extent, the nasal depression narrow, elongated, with a groove from its fore part extending nearly to a third from the tip, the sides convex, the edges direct and sharp; lower mandible with the angle long and extremely narrow, the dorsal line slightly ascending, the sides sloping outwards and concave, the edges sharp, the tip acute; the gape-line straight, commencing under the centre of the eye, at first somewhat sinuate, and toward the end slightly deflected. A large bare space on each side of the head, extending from the base of the bill to a little behind the eye and angle of the mouth. This bare space is bright verdigris green; the base of the bill also on each side is green of a lighter tint, as far as the nostrils; but all the rest is deep black, excepting the two tips, which are greenish-grey or horn-colour, to the extent of an inch. These particulars are taken from the newly-killed bird. The occipital feathers are very slightly elongated, being an inch and a half in length. The dorsal plumes have rather firm, though slender, straightish shafts, the longest extending two inches and a half beyond the tail, and sixteen inches in length. The bare part of the tibia and the upper part of the tarsus are flesh-coloured; the scutella of the tarsi and toes dusky-brown; the hind part of the tarsus and the soles dusky flesh-coloured; the claws brownish-black. The plumage white with a faint tint of yellowish.

Erodius albus, which is considerably smaller, has the bill long, stout, compressed, tapering; the upper mandible with the dorsal line straight for two-thirds from the base, then slightly declinato-convex, the ridge broad at the base, narrow but convex in the rest of its extent, the nasal depression narrow, elongated, with a groove from its fore part extending nearly to a third from the tip, the sides convex, the edges direct and sharp; lower mandible with the angle long and extremely narrow, the dorsal line slightly ascending; the sides sloping outwards and concave, the edges sharp, the tip

acute; the gape-line straight, commencing under the centre of the eye, at first somewhat sinuate, and toward the end slightly deflected; a large bare space on each side of the head extending from the base of the bill to a little behind the eye and angle of the mouth. This bare space is said to be "pale green." Mr Yarrell says the bill is "yellow at the base, black towards the point." Mr Gould says it is "deep brown tinged with yellow about the nostrils." No two authors agree on this subject. I find it in the individual here described yellow, with the tip slightly dusky. The occipital feathers are very slightly elongated, the largest being an inch and four-twelfths. The dorsal plumes have rather firm, though slender, straightish-shafts, the longest extending two inches beyond the tail, and fourteen inches in length. The tibia, tarsus, toes, and claws, are black. The plumage white, with a faint yellowish-tinge.

Now, the only differences in the above descriptions are, in the general size, the colour of the bill, and that of the feet; but in the measurements of the bill and feet, as will presently be seen, the difference is great, and while the one has twenty tarsal scutella, the other has only fourteen.

Erodius Egretta is smaller than E. albus. The bill is long, stout, compressed, tapering; the upper mandible with the dorsal line straight for two-thirds, then slightly declinato-convex, the ridge broad and slightly convex at the base, narrowed, and becoming rather acute toward the end, the nasal depression narrow, elongated, with a groove to a third from the tip, the sides convex, the edges direct and sharp; lower mandible with the angle long and extremely narrow, the dorsal line ascending and almost straight, the edges sharp and direct, the tip acuminate; the gape-line straight, commencing under the eye; the bill is bright-yellow, as is the space between it and the eye. The occipital feathers are slightly elongated. The dorsal plumes have very slender, slightly decurved, and slightly undulated shafts, the longest extending about ten inches beyond the end of the tail. The tibia, tarsus, toes, and claws are black. Plumage white. Some of the measurements of three individuals of these three species are here given.

	Vict.	Alb.	Egr.	Alb.
Length, . .	44½	40	37	40
Extent of wings, .	66	...	55	
Bill along the ridge, .	$4\frac{9}{12}$	$4\frac{7\frac{1}{2}}{12}$	$4\frac{7}{12}$	
Gape-line, . .	$6\frac{2}{12}$	...	$5\frac{5}{12}$	
Height of bill, . .	$\frac{10\frac{1}{2}}{12}$	$\frac{10\frac{1}{2}}{12}$	$\frac{11}{12}$	
Wing from flexure, .	$18\frac{1}{4}$	16	$16\frac{1}{2}$	
Tail, . . .	7	$6\frac{1}{2}$	$6\frac{1}{4}$	
Bare part of tibia, .	$5\frac{1}{2}$	$3\frac{8}{12}$	$3\frac{1}{2}$	$3\frac{1}{2}$
Tarsus, . .	$7\frac{9}{12}$	$6\frac{5}{12}$	$6\frac{1}{12}$	$6\frac{1}{2}$
Third toe, . .	$4\frac{1}{2}$	$3\frac{1}{2}$	$3\frac{11}{12}$	$4\frac{1}{4}$
Its claw, . .	$\frac{8}{12}$	$\frac{7\frac{1}{2}}{12}$	$\frac{9}{12}$	

It will be seen how greatly our new species exceeds the others in the bare space on the tibia, in the tarsus, and in the middle toe. All the individuals described were adult, with the dorsal plumes in the same state.

It is clear that Erodius Victoriæ exceeds E. albus in size, as much as the latter exceeds the American Egret. Its bill, however, is more slender than that of either, and its tarsi and toes much longer, while the bare part of the tibia greatly exceeds that of the rest. I have examined the digestive organs of E. Victoriæ and E. Egretta, but not of E. albus. Of the first, the œsophagus was 28 inches long, $2\frac{1}{4}$ inches wide at the proventriculus; stomach 2 inches in diameter, with a pyloric lobe 10 twelfths in breadth; intestine 9 feet 1 inch, from 3 to 2 twelfths wide.

Not finding this bird anywhere described or figured, although it may have been confounded with E. albus, and although it may possibly be the *Egretta nigrirostris* of Mr Grey and the Prince of Canino, whose names, however, cannot be admitted unless they have minutely described or figured the species to which they have given it,—I propose naming it after our most gracious Queen, it being, in my estimation, as worthy as a bird can be of such an honour. The specimen examined, beautifully prepared by Mr Carfrae, is now, I understand, in the possession of the Earl of Haddington.

224. Erodius albus. European White Egret.

Length nearly three feet and a half; occipital feathers very slightly elongated; dorsal plumes with the shaft stiffish, straight, and extending a little beyond the tail; plumage

white; bill yellow; bare preocular space greyish-green; feet black.

This species, which is said to occur abundantly in the eastern parts of Europe, and to straggle occasionally to its western shores, has been met with in a few instances in England. It has not been well described from British specimens, and albinos of Ardea cinerea, it would appear, have sometimes been taken for it. Mr Strickland, however, has given an account of several individuals.

Great White Heron.

Ardea alba, Linn. Syst. Nat. i. 239.—Ardea alba, Lath. Ind. Ornith. ii. 695.—Ardea Egretta, Temm. Man. d'Ornith. iv. 372.—Erodius albus, White Egret, MacGillivray, Brit. Birds, iv.

225. Erodius Garzetta. Curl-plumed White Egret.

Length about two feet; bill slender; plumage soft and blended; occipital feathers considerably elongated, three of them very long, slender, tapering, compact; those of the lower part of the neck similarly elongated and tapering; dorsal plumes with the shaft very slender, straight, recurved at the end; plumage white; bill black; bare preocular space green; bare part of tibia, and upper half of tarsus black, lower part and toes greenish-yellow. The female similar to the male, but a little less. Young white, without occipital or dorsal plumes, the bill yellow for more than half its length.

Male, 24, . . , $10\frac{3}{4}$, $3\frac{8}{12}$, $4\frac{2}{12}$, $2\frac{3}{12}$, $1\frac{5}{12}$.

This beautiful Egret is said to occur in various parts of Asia, Africa, and the south of Europe, and to migrate northward as far as Germany. In England it is merely an accidental visitant, and in Scotland has not, I believe, been met with.

Little White Egret.

Ardea Garzetta, Linn. Syst. Nat. i. 937.—Ardea Garzetta, Lath. Ind. Ornith. ii. 694.—Ardea Garzetta, Temm. Man. d'Ornith. ii. 574.—Erodius Garzetta, MacGillivray, Brit. Birds, iv.

226. Erodius russatus. Buff-backed Egret.

Length about twenty inches; bill stout; tail slightly emarginate. Adult with the feathers of the hind-head and neck elongated, hair-like, and reddish-yellow; dorsal plumes slender, decomposed, and of the same colour; fore part of breast

and back tinged with cream-colour, the rest of the plumage white; bill pale yellow; feet dusky anteriorly, yellowish behind. Young without elongated feathers, pure white, except the head, which is tinged with yellow; bill pale yellow, feet dusky-green.

Male, 20, . . , $9\frac{1}{12}$, $2\frac{3}{12}$, $3\frac{1}{4}$, $2\frac{5}{12}$, $\frac{8}{12}$.

According to Wagler, this species occurs in Greece, Spain, and Italy; in Persia, Egypt, Nubia, Cyprus, and Senegambia; is not unfrequent in southern Africa, common in Java, and, as it would appear, in New Holland. The only specimen obtained in Britain is a female, shot near Kingsbridge, in the end of October 1805, and presented to Montagu, who described it, but mistook it for Ardea æquinoctialis of Linnæus. The error was detected after it had, along with his collection, been transferred to the British Museum.

Ardea russata, Wagler, Syst. Av.—Ardea russata, Temm. Man. d'Ornith. iv. 377. — Erodius russatus, Buff-backed Egret, MacGillivray, Brit. Birds, iv.

GENUS CXVII. CICONIA. STORK.

The Storks resemble the Herons, but differ from them in being of a more robust form, with the bill larger, the toes shorter, the claws convex and obtuse, and that of the middle toe without serrature. The body large and compressed; the neck long and rather thick; the head ovate and moderately compressed. Bill much longer than the head, straight, stout, conical, moderately compressed, tapering to a point; upper mandible with the dorsal line straight, very slightly declinate at the end, the sides sloping and a little convex, the ridge obtuse, no nasal sinus or groove, the edges sharp and direct, the tip acute; lower mandible with the angle very long and narrow, the dorsal line ascending and very slightly convex, the sides inclined outwards and somewhat convex, the edges sharp, the tip acute; gape-line straight, commencing under the eyes. Nostrils oblong, perforated as it were in the bill near the ridge. Eyes small, surrounded by a bare space. Aperture of ear roundish, rather large. Legs very long, rather slender; tibia bare for about half its length, reticulated; tarsus long, compressed, reticulated all round; hind toe short, and slightly elevated; anterior toes of moderate length, webbed at the base, scutellate, but at

the base reticulate; claws short, convex, obtuse. Plumage moderately full, and generally compact; feathers of the head and neck oblong, of the lower parts of the neck elongated; scapulars very large and broad; wings long, ample, of thirty quills, the third longest; tail rather short, rounded, of twelve feathers.

The Storks reside chiefly in marshy places, feeding on frogs, lizards, fishes, small quadrupeds, and occasionally young birds. They migrate in large bands, flying in continuous or angular lines; nestle generally in high places, and lay three or four elliptical light-coloured eggs. The young remain in the nest until fledged.

227. Ciconia alba. White Stork.

Bare part of the sides of the head very small and smooth loral spaces feathered; bill and feet red; plumage white the quills, larger coverts, alula, and scapulars black.

Male, 42, 76, 25, $7\frac{1}{12}$, $8\frac{2}{12}$, 3, $\frac{5}{12}$.

Although extensively dispersed, and common in Holland, during the summer, this species is now very seldom met with in England. In the museum of the University of Edinburgh is an individual shot in Mainland, Shetland, and presented by Mr M. Cameron.

Ardea Ciconia, Linn. Syst. Nat. i. 235.—Ardea Ciconia, Lath. Ind. Ornith. ii. 676.—Ciconia alba, Temm. Man. d'Ornith. ii. 560.—Ciconia alba, White Stork, MacGillivray, Brit. Birds, vol. iv.

228. Ciconia nigra. Black Stork.

Bare part of the sides of the head very small and smooth; loral spaces partly bare; bill and feet red; plumage brownish-black, glossed with purple and green; breast and abdomen white. The young, according to M. Temminck, have the bill and feet olive-green, the head and neck brownish-red, the feathers bordered with reddish; the body, wings, and tail blackish-brown, with slight bluish and greenish reflections.

Male, 38, . . , $20\frac{1}{2}$, $7\frac{1}{2}$, $8\frac{1}{2}$, $3\frac{3}{12}$, $\frac{5}{12}$.

Generally dispersed over the eastern and middle parts of the continent, and occurs occasionally in the northern and western. Only four instances of its capture in Britain are recorded; the first by Montagu, in Somersetshire, the second

by Dr Moore, in Devonshire; the third near Ipswich, and the fourth near Poole, in Dorsetshire.

Ardea nigra, Linn. Syst. Nat. i. 235.—Ardea nigra, Lath. Ind. Ornith. ii. 677.—Ciconia nigra, Temm. Man. d'Ornith. ii. 561.—Ciconia nigra, Black Stork, MacGillivray, Brit. Birds, iv.

The transition from the Storks to the Tantali is but slight, and were there not other birds intimately connected with the latter, they might even be referred to the same group. But as the Tantali pass into the Ibises, and the latter into the Curlews, it is necessary to separate them from the Storks and Herons, from which they differ not only in the form of the bill, but in having two cœcal appendages to the intestine, and in the form of the tongue, which is extremely short.

FAMILY XL. IBIDINÆ. IBIDINE BIRDS, OR IBISES.

Birds of large or moderate size, resembling Herons in their general appearance, but with the bill more elongated, and more or less arched. The body ovate; the neck long, and rather slender; the head of moderate size, ovate or oblong, flattened above, little compressed, bare in front. Bill very long, arcuate, stout at the base, gradually attenuated, with the tip obtuse. Mouth rather narrow; tongue extremely small, triangular, flat, and thin; œsophagus wide; stomach large, broadly elliptical, muscular, with the epithelium dense, and longitudinally rugous; intestine of moderate length and width; cœca very small; cloaca globular. Trachea destitute of inferior laryngeal muscles. Nostrils linear, subbasal, near the ridge. Eyes small, in a bare space, which extends to the bill. Aperture of ear rather small, and roundish. Legs long, rather slender; tibia bare in its lower half, reticulated; tarsus long, rather stout, reticulated, or scu-

tellate ; toes rather long ; the first on the same plane as the rest, the second considerably shorter than the fourth, both connected with the third by basal webs ; claws small, arched, compressed, tapering. Bare space on the head varying, sometimes extending over a great part of the neck, always including the gular space. Plumage moderate ; wings long, broad, of about thirty quills, the second and third longest ; tail short, nearly even, of twelve feathers.

These birds, chiefly inhabitants of warm climates, in their habits and food resemble the Herons, as well as in their mode of nestling. The young remain in the nest until fledged. In Britain only two species occur.

GENUS CXVIII. IBIS. IBIS.

The Tantali, of which there are no European species, resemble Storks or Herons in every respect, excepting the form of the bill, which, although very large and stout, is narrowed and arcuate toward the end. The Ibises are similar to the Tantali, but have the bill more attenuated, and approaching in structure to that of the Curlews. They are generally of moderate size, with the body ovate ; the neck long and slender ; the head small, oblong, compressed. Bill very long, slender, rather thick at the base, arcuate, tapering, compressed, toward the end somewhat cylindrical, and slightly enlarged at the tip, which is obtuse ; upper mandible with the dorsal line arched, the ridge rather narrow, separated in its whole length by a narrow groove from the sides, which are erect and flat at the base, narrowed and convex toward the end, the edges sharp and direct, the tip rather obtuse ; lower mandible with the angle long, very narrow, with a groove extending from it to the tip, the sides erect and flat, beyond the middle convex, the edges inclinate, the tip obtuse ; the gape-line arcuate, commencing before the eyes. Mouth rather narrow ; upper mandible little concave, with two or four prominent lines ; tongue extremely short, triangular, flat, thin, obtuse ; œsophagus wide ; proventriculus moderate ; stomach large, broadly elliptical, with its

muscular coat very thick, the lateral muscles being distinct, the epithelium dense, thick, and longitudinally rugous; intestine rather long, of moderate width; cœca very small, cylindrical; cloaca globular. Nostrils linear or oblong, subbasal, in the fore part of the narrow bare basal membrane. Eyes rather small. Aperture of ear very small. Legs long, and rather slender; tibia bare for a considerable space, and reticulated; tarsus rather long, reticulate in the larger species, scutellate in the smaller, or partially reticulate and scutellate; toes four, rather long, moderately stout, the first large, and articulated on the same plane; all scutellate in their whole length, flattened beneath, the anterior webbed at the base; claws short or moderate, slender, compressed, arched, acute. Head partially or entirely bare; plumage moderate; wings large, of about twenty-five quills, the third generally longest, some of the inner secondaries elongated; tail short, or moderate, even or rounded, of twelve broad feathers.

The sexes are alike in colour, the female smaller; the young differently coloured, and with the head feathered. These birds belong to the tropical regions of both continents, some migrating into the colder. They resemble the Herons in their modes of walking and flying.

229. Ibis Falcinellus. Glossy Ibis.

Head feathered, excepting the loral spaces. Adult with the feathers of the head and neck lanceolate and glossy; the neck, breast, and fore part of the back deep chestnut-red; the hind part of the back, wings, and tail green, glossed with bronze and purple; the plumage in general with silky lustre. Young with the feathers of the head and neck oblong, soft, without gloss, each with two marginal white streaks; the lower parts deep dull brown, the upper glossy green, tinged with bronze and purple.

Male, 24, . ., $11\frac{1}{2}$, $5\frac{1}{2}$, $3_{1}^{5}{}_{2}$, $2_{1}^{5}{}_{2}$, $_{1}^{7}{}_{2}$.

Dispersed from India and Egypt to Siberia and the northern parts of Europe, and occurring in America. Like the White Ibis, it was held in veneration by the ancient Egyptians, and is not unfrequently found preserved in their sepulchres. It was distinguished from that bird by the name of Black Ibis. It is one of the species that approach nearest in form to the

Curlews. Although many individuals have been obtained in England, it ranks there only as a straggler.

Tantalus Falcinellus, Linn. Syst. Nat. i. 241 ; Tantalus Falcinellus, igneus, and viridis, Lath. Ind. Ornith. ii. 707.—Ibis Falcinellus, Temm. Man. d'Ornith. ii. 598.—Ibis Falcinellus, Glossy Ibis, MacGillivray, Brit. Birds, v.

GENUS CXIX. PLATALEA. SPOONBILL.

The Spoonbills may be said to be Ibises, with the bill flattened and expanded toward the extremity. They are birds of rather large size, having the body ovate, the neck long, and rather slender ; the head of moderate size, ovate, and flattened above, but little compressed. Bill very long, nearly straight, extremely depressed, nearly as broad as the head at the base, gradually narrowed toward the middle, then expanding into an obovate disk, much broader than the head ; but when viewed laterally extremely slender, unless at the base ; both mandibles covered with a thin and soft skin ; the gape-line nearly straight. Mouth rather narrow ; both mandibles internally flattened, with a medial groove, and beautifully marked with very narrow elevated lines, and grooves parallel to the margins ; tongue extremely small, broader than long ; a dilatable gular sac of small extent : œsophagus rather wide ; proventriculus bulbiform ; stomach rather large, roundish, with the muscular coat thick, its fibres disposed in large fasciculi, the tendons very large, the epithelium very thick, but rather soft ; intestine very long, and of moderate width ; two extremely short cœca ; cloaca large, and globular. Nostrils linear-elliptical, subbasal, vertical. Eyes small, in a bare space which extends to the bill. Aperture of ear rather small and roundish. Legs long, rather slender ; tibia bare in its lower half, reticulate ; tarsus stoutish, reticulated ; toes rather long, moderately stout, the first on the same plane as the rest, the anterior connected by basal webs, all scutellate ; claws small, slightly arched, compressed, tapering, pointed. The bare space on the head varies in extent, in one species including the whole head and part of the neck. Plumage moderate ; feathers of the head and neck slender ; wings large, of about thirty quills ;

the second and third longest; tail short, even, of twelve broad feathers.

In structure these birds are intermediate between the Herons and Curlews, and intimately allied to the Ibises. They belong to the warm climates of both continents, some migrating northward.

230. Platalea Leucorodia. White Spoonbill.

Adult with a large occipital crest of linear feathers, the loral spaces and throat bare, the bill black, variegated with grey or dull yellow, a large portion of the expanded part of the upper mandible yellow, the plumage white, the crest tinged with yellow, the lower part of the neck and a portion of the breast buff-coloured. Young crestless, with the bill darker, the plumage white, without yellow on the neck, and with the shafts of the quills and the tips of the primaries and their coverts black.

Male, 32, . ., $15\frac{1}{2}$, $8\frac{1}{2}$, $5\frac{5}{12}$, 3, $\frac{6}{12}$.

Extensively distributed over the temperate and warmer parts of Europe, and said to be especially abundant in Holland, where it is migratory. It nestles on trees or bushes, or among the reeds near the edges of small lakes. The eggs are two or three, white, with faint red spots. Of rare and irregular occurrence in the south of England.

Platalea Leucorodia, Linn. Syst. Nat. i. 231.—Platalea Leucorodia, Lath. Ind. Ornith. ii. 667.—Platalea Leucorodia, Temm. Man. d'Ornith. ii. 595.—Platalea Leucorodia, White Spoonbill, MacGillivray, Brit. Birds, iv.

The series of Waders here ends, and that of Swimmers commences. Among the former we have seen some birds that never or seldom wade, and others that swim with ease; but among the latter we find none that are not addicted to swimming. Some reside almost constantly in the water, others seldom alight upon it; some dive, others plunge from on wing, and many swim but never dive. The series is extremely interesting, and as the species are comparatively few, and yet their forms and habits very diversified, their study is more calculated to lead to clear views of classification than that of the much more numerous land birds. Yet,

by most authors, they have been comparatively neglected. They may be divided into three very natural orders, namely, the CRIBRATRICES, or Sifters; URINATRICES, or Divers; and MERSATRICES, or Plungers; each of which may be subdivided into very natural groups or families.

ORDER XVII. CRIBRATRICES. SIFTERS.

The birds of which this order is composed are those known by the familiar names of Geese, Swans, Ducks, Teals, Wigeons, Pochards, Shovellers, and others, togegether with the Flamingoes and Mergansers. They all agree in having the bill covered with soft skin, the only hard or horny parts being the two ungues, or nail-like bodies, situate one at the tip of each mandible, and in the presence of numerous transverse or oblique elevated lamellæ on the inner side of both mandibles, at the margins of which they are generally enlarged, and assume various forms in the different species, of which the bill may thus be described as marginally lamellate, pectinate, serrate, or denticulate. The families of the Cribratrices are the PHŒNICOPTERINÆ, composed of the genera Phœnicopterus and Cereopsis, neither of which have representatives in Britain, ANSERINÆ, ANATINÆ, FULIGULINÆ, and MERGANSERINÆ. The birds of the first of these orders resemble some of the Waders in form, and those of the last approximate to the Divers. The general characters of the order, briefly stated, are the following:—

Body large, full, and muscular; head oblong, compressed. Bill never very long, sometimes short, cerate, with internal or marginal lamellæ. Tongue fleshy, large;

œsophagus narrow; stomach an extremely muscular gizzard, with a dense epithelium, having two grinding plates; intestine long, rather wide, with two long, moderately wide cœca. Trachea in the females uniform, but in the males with diversiform enlargements at its lower extremity; the contractor muscles, which are large, give off two slips to the clavicles, and end in two others which go to the sternum, there being no inferior laryngeal muscles. Eyes and apertures of ears generally small. Feathers ovate or oblong, curved; wings convex; tail short. Feet with four toes, the anterior rather long and webbed, the hind toe small and free; claws generally small.

Birds of this order occur in all parts of the globe. Among the Swimming Birds they are apparently analogous to the Radrices among the land birds, and next to them they are the most directly useful to man. They feed on vegetable substances, but some also on fishes, and many on mollusca and insects. The nest is rude, and usually placed on the ground; the eggs numerous, and white or light-coloured, without spots. The young, covered with stiffish down, are able to run, swim, and dive, immediately after exclusion, and are led about by their mother, who evinces the greatest anxiety for their safety. Of the species, which are very numerous, forty have been met with in Britain. The males are always larger than the females.

FAMILY XLI. ANSERINÆ. ANSERINE BIRDS, OR GEESE.

These are the largest birds of the order. They have the body ovate or elliptical, very large and full, of nearly equal height and breadth; the neck long, and rather

slender; the head rather small, oblong, compressed, and arched above. Bill stout, short or moderate, much higher than broad at the base, gradually depressed toward the end, of nearly equal breadth or narrowed, with large convex unguis. Upper mandible internally concave, with a medial tuberculate ridge, one or two series of tubercles on each side, then a series of flattened lamellæ, and along the margin numerous lamellæ, often enlarged at the end; tongue fleshy, thick, margined with pointed papillæ or fibres; œsophagus long, narrow, a little enlarged below; stomach a transversely elliptical gizzard, of which the lateral muscles are extremely thick, the tendons large, the epithelium with two circular, somewhat concave, thick grinding plates; intestine long, rather narrow; cœca long, narrow at the base, then enlarged, and nearly cylindrical. Trachea nearly uniform, with the inferior larynx simple and compressed. Nostrils small or moderate, submedial, oblong. Eyes small. Aperture of ear rather small. Legs placed considerably forward, very strong, generally of moderate length; tibia bare for a short space; tarsus moderately compressed; toes four, the first very small, and free; the anterior rather long, the outer little shorter than the third; the interdigital membrane full; claws short, arched, obtuse. Plumage rather full, close, and firm, unless on the head and neck, where it is soft and blended; wings very long and broad; primaries decurved, the second and third longest, the first little shorter; tail short, rounded, of from sixteen to twenty-four feathers.

The Anserinæ inhabit chiefly the Arctic and Antarctic regions in summer, migrating in autumn toward the Equator. They are all gregarious, fly in lines when journeying, have a strong and rapid flight, walk slowly, swim with ease, but never dive in quest of their food, which consists entirely of vegetable substances. Although they feed chiefly on land, or in marshy places, they also, when swimming in shallow water, pull up the submersed parts

of plants by immersing the head and neck. The nest, composed of grass and other herbage, is placed in marshes or on islands; the eggs numerous, elliptical, and white, or grey. The male remains with the female and young. The plumage is the same in both sexes, and in this respect the young differ little from the adults. Their flesh is savoury, but not easily digestible.

GENUS CXX. ANSER. GOOSE.

Birds of large size, having the body remarkably full, ovate, rather higher than broad; the neck long and slender; the head rather small, oblong, arched above, compressed. Bill as long as the head, stout, straight, subconical, of much greater height than breadth at the base, narrowed toward the end, where it is somewhat depressed, and broadly rounded; upper mandible with the ridge broad and flattened at the base, then convex, the dorsal line declinate and straight to near the unguis, which is round, very convex, decurved, and strong, the edges arched, denticulated with the triangular outer ends of the lamellæ, which appear from without. Mouth of moderate width; its roof concave, with a medial row of tubercles, one or two series on each side, then a series of small transverse ridges, a longitudinal groove, and a marginal series of lamellæ; tongue fleshy, thick, with a median groove, basal and lateral acute horny papillæ, and thin, horny, rounded tip; œsophagus long, narrow, enlarged below; stomach an extremely developed, oblique, transversely elliptical gizzard, with excessively thick muscles, and roundish, concave grinding plates; intestine long, rather narrow; cœca long. Inferior larynx compressed. Nostrils moderate, oblong, submedial. Eyes small, eyelids feathered. Aperture of ear rather small. Legs moderate, strong, placed well forward; tibia bare for a very short space; tarsus moderately compressed, reticulate; hind toe very small, elevated, thick beneath; anterior toes rather long, scutellate, at the base scaly. Membranes full; claws short, arched, rather compressed, obtuse. Plumage full, firm, unless on the head and neck; feathers of the head very small

and oblong, of the neck narrow, and disposed in oblique ridges; wings large, of twenty-six quills, the second longest, the first slightly shorter; secondaries broad and rounded, the inner elongated. Tail short, rounded, of sixteen broad feathers.

The Geese inhabit the temperate and arctic regions of both Continents, reside mostly in marshes, but frequently betake themselves to dry fields and pastures, feed on vegetable substances, walk slowly and sedately, swim with ease, have a strong and rapid flight, and emit harsh cries. They are gregarious, nestle on the ground, and lay numerous, broadly ovate, white eggs. The male continues with the female and young. Their flesh is much esteemed, being nutritious and highly flavoured.

231. ANSER PALUSTRIS. THICK-BILLED GREY GOOSE.

Male thirty-three inches long; bill very thick, as long as the head, two inches and a half in length, an inch and a half in height at the base, ten and a half twelfths in breadth behind the circular unguis, yellowish-orange, with the unguis white or bluish-grey; the tarsus three inches long, flesh-coloured; the wings scarcely shorter than the tail; feathers of the neck linear-oblong, disposed in ridges; head and neck greyish-brown; upper parts grey and brown, barred with the whitish terminal margins of the feathers; hind part of the back ash-grey; lower parts pale brownish-grey, becoming white behind. Female similar, but smaller. Young with the upper parts darker, the head and neck of a lighter brown.

Wild Goose. Marsh Goose. Grey Lag. Grey Goose. Fen Goose.

Male, 33, 64, $17\frac{1}{2}$, $2\frac{1}{2}$, 3, $3\frac{1}{12}$, $\frac{6}{12}$. Female, 30, 60.

This species is not of common occurrence in any part of Britain, and does not remain to breed with us. It arrives in October and departs in April. Generally dispersed over Europe.

Anas Anser, Linn. Syst. Nat. i. 197.—Anas Anser, Lath. Ind. Ornith. ii. 841.—Anser ferus, Temm. Man. d'Ornith. iv. 517.—Anser palustris, Thick-billed Grey Goose, MacGillivray, Brit. Birds, v.

232. ANSER SEGETUM. NARROW-BILLED GREY GOOSE.

Male thirty inches long; bill moderately thick, nearly as

long as the head, two inches and a third in length, an inch and two-twelfths in height at the base, nine-twelfths in breadth behind the circular unguis, yellowish-orange with the base and unguis black; tarsus three inches long, dull yellow-orange; the wings longer than the tail; feathers of the neck linear-oblong, disposed in ridges; head and neck greyish-brown; upper parts dark brown and grey, barred with the whitish terminal margins of the feathers; hind part of back blackish-brown; lower parts pale brownish-grey, becoming white behind. Female similar, but smaller. Young with the upper parts darker, the head and neck of a lighter brown; three small patches of white feathers at the base of the bill.

Male, 31, 64, $18\frac{1}{2}$, $2\frac{4}{12}$, $3\frac{2}{12}$, 3, $\frac{6}{12}$.

Occurs in various parts of Britain during the winter, and breeds in the Outer Hebrides, where I have frequently seen it in summer. This species is much more common than the last, but less so than the next.

Wild Goose. Bean Goose. Small Grey Goose. Orange-legged Goose.

Anas Anser, Linn. Syst. Nat. i. 197.—Anas segetum, Lath. Ind. Ornith. ii. 843.—Anser segetum, Temm. Man. d'Ornith. iv. 517.—Anser segetum, Bean Goose, MacGillivray, Brit. Birds, v.

233. Anser brachyrhynchus. Short-billed Grey Goose.

Male twenty-eight inches long; bill (comparatively) very small, shorter than the head, nearly two inches in length, an inch and two-twelfths in height at the base, seven and a half twelfths in breadth behind the unguis, bright carmine, with the broadly elliptical unguis and the base of both mandibles black; the tarsus two inches and a half long, pale purplish-pink colour; the wings a little longer than the tail; feathers of the neck linear-oblong, disposed in ridges; head and neck greyish-brown; upper parts ash-grey, barred with the whitish terminal margins of the feathers; hind part of the back deep ash-grey; lower parts pale grey, becoming white behind. Female similar to the male, but smaller. Young with the upper parts brownish-grey, barred with brownish-white, the lower hind-neck reddish-brown, the lower parts more grey.

Male, 28, 62, $17\frac{1}{2}$, $1\frac{11}{12}$, $2\frac{1}{2}$, $2\frac{7}{12}$, $\frac{6}{12}$. Female, 26, 60.

Apparently more common in Britain than the last. Frequent with the Edinburgh poulterers, and more so in the

London markets. First distinguished from the Bean Goose by M. Baillon, in 1833; afterwards by Mr Bartlet, in 1838, who proposed naming it Pink-footed Goose, Anser phœnicopus.

Anser brachyrhynchus, Baill. Mem. Soc. d'Emul. d'Abbeville.—Anser brachyrhynchus, Temm. Man. d'Ornith. iv. 520.

234. Anser albifrons. White-fronted Goose.

Male twenty-eight inches long; bill thick, short, an inch and two-thirds in length, an inch in height at the base, carmine-red, with the unguis white; tarsus three inches long, bright orange-red, the claws whitish; the wings longer than the tail; feathers of the neck linear-oblong, disposed in ridges; head and neck greyish-brown, forehead white, with a black band behind; upper parts brownish-grey, barred with the whitish terminal margins of the feathers; hind part of back deep grey; lower parts greyish-white, irregularly patched with black, and becoming pure white behind. Female similar, but smaller. Young with the upper parts darker, the head and neck of a brighter brown, the white band on the forehead very narrow, and tinged with orange.

Male, 28, 54, 17, $1\frac{8}{12}$, 3, 3, $\frac{6}{12}$.

This species arrives, like the rest, in the end of October, disperses over the country, remains all winter, and departs in the beginning of April. It is not common, however, although generally distributed in the northern parts of Europe and America. According to Mr Audubon, the eggs are dull yellowish-green, with indistinct patches of a darker tint of the same colour, their length two inches and three quarters, their breadth an inch and three quarters.

Laughing Goose. Bald Goose.

Anas erythropus, Linn. Syst. Nat. i. 197.—Anas albifrons, Gmel. Syst. Nat. i. 509.—Anas albifrons, Lath. Ind. Ornith. ii. 842.—Anser albifrons, Temm. Man. d'Ornith. iii. 518.—Anser albifrons, White-fronted Goose, MacGillivray, Brit. Birds, v.

GENUS CXXI. BERNICLA. BERNACLE-GOOSE.

The Bernacle-Geese are distinguished from the true Geese by their shorter, narrower, and somewhat conical bill, and by the feathers of the neck being disposed in the ordi-

nary manner, so as not to form ridges and grooves. In this genus the body is ovate, of nearly equal height and breadth, the neck long and slender, the head small, oblong, compressed. Bill much shorter than the head, moderately stout, straight, subconical, higher than broad at the base, narrowed toward the end, where its breadth does not exceed its height; upper mandible with the ridge broad and flattened at the base, then convex, the dorsal line straight and declinate to the unguis, which is round or broadly ovate, the edges straight, denticulate with the rounded outer ends of the lamellæ, which are scarcely apparent from without. Mouth of moderate width; tongue, digestive organs, and trachea, as in the genus Anser. Nostrils moderate, oblong, submedial. Eyes small, eyelids feathered. Aperture of ear rather small. Legs rather short, or moderate, strong, placed well forward; tibia bare for a very short space; tarsus moderately compressed, reticulated; hind toe very small; anterior toes rather long, scaly at the base, then scutellate; membranes full; claws small, arcuate, rather depressed, obtuse, that of the middle toe broadly rounded. Plumage full, close, firm, soft, and glossy; feathers of the head short, of the neck narrow, and blended; wings large, of twenty-eight quills; tail short, rounded, generally of sixteen broad feathers.

The Bernacles inhabit the temperate and cold climates of both continents in winter, and in summer betake themselves to the Arctic regions, where they breed, forming their nests of grass and other herbage, and laying numerous white or greenish elliptical eggs. Their habits are similar to those of the Geese, but they are more active, and their flesh is still more highly esteemed. Although the name Bernicla, first given by Mr Stephens to this genus, is barbarous, I retain it until a better is found.

235. Bernicla leucopsis. White-faced Bernacle-Goose.

Male twenty-seven inches long; bill an inch and a third in length, black; tarsus two inches and ten-twelfths long, black; the fore part of the head, its sides, and the throat white; hind-head and neck glossy black; fore and hind parts

of the back black; its middle part, the scapulars, and wing-coverts ash-grey banded with black; the lower parts white, the sides faintly barred with ash-grey. Female similar, but smaller.

Male, 27½, 55, 17, 1 4/12, 2 1/2, 2¼, 4/12. Female, 24, 52.

Occurs during the winter in large flocks, chiefly on the western side of Britain. Feeds on grass, roots of aquatic plants, and Zostera marina. In summer it repairs to the arctic regions to breed. It is found in America also. The eggs are from six to eight, two inches and seven-twelfths long, an inch and eight-twelfths in breadth, elliptical, and of a greyish-white tint.

Clakis. Claike Goose. Barnacle. White-cheeked Barnacle.

Anas Bernicla, Linn. Syst. Nat. i. 198.—Anas Erythropus, Lath. Ind. Ornith. ii. 843.—Anser leucopsis, Temm. Man. d'Ornith. iv. 520.

236. Bernicla melanopsis. Black-faced Bernacle-Goose.

Male twenty-four inches long; bill an inch and a half in length, black; tarsus two inches and a quarter long, black; head and neck glossy black; a patch of white, dotted with black, on each side of the upper part of the neck; the upper parts of the body brownish-grey, the lower greyish-white; the sides barred with ash-grey. Female similar, but smaller.

Male, 25, 48, 13½, 1½, 1 4/12, 5/12. Female, 23, 46.

This species, which is much inferior in size to the last, and easily distinguishable from it by having the head entirely black, arrives in October and departs in April. It is more numerous than the other species, especially along the eastern coasts, where it feeds chiefly on the cylindrical fleshy roots of Zostera marina. It breeds in the arctic regions of both continents, laying six or eight eggs, of a nearly elliptical form, pale greyish-green, two inches and a half in length, an inch and seven-twelfths in breadth.

Brent Goose. Brand Goose. Barnacle. Black-headed Barnacle. Ring-necked Barnacle. Clatter Goose. Horra Goose. Ware Goose.

Anas Bernicla, Linn. Syst. Nat. i. 198.—Anas Bernicla, Lath. Ind. Ornith. ii. 844.—Anser Bernicla, Temm. Man. d'Ornith. iv. 522.—Bernicla melanopsis, Black-faced Bernacle-Goose, MacGillivray, Brit. Birds, v.

237. Bernicla ruficollis. Red-necked Bernacle-Goose.

Male twenty-three inches long; bill an inch and two-twelfths in length, brown, with the unguis black; tarsus two inches and a quarter long, black; a white patch between the bill and the eye; behind the eye an oblong white space, having a brownish-red patch in the middle, and extending narrowed down the side of the neck; upper part of the head, hind-neck, and throat black; fore part of neck brownish-red, with a transverse inferior black margin, succeeded by a white ring; fore part of back, scapulars, and wings black, larger coverts tipped with white, fore part of breast black, feathers of the sides black, terminally edged with white; the rest of the lower parts, and the rump white; tail black.

Male, 23, . . , . . , $1\frac{9}{12}$, $2\frac{1}{4}$, $1\frac{9}{12}$, $1\frac{5}{12}$.

This species occurs in Britain merely as a straggler, or accidental winter visitant. The first specimen mentioned was obtained near London, in 1776, and is in the Newcastle Museum; another was caught near Wycliffe; a third shot near Berwick-on-Tweed; and several were killed in 1813 in Cambridgeshire. M. Temminck states that it inhabits the northern countries of Asia, and is seldom seen in the western parts of Europe.

Red-breasted Goose.

Anas ruficollis, Gmel. Syst. Nat. i. 511.—Anas ruficollis, Lath. Ind. Ornith. ii. 841.—Anser ruficollis, Temm. Man. d'Ornith. ii. 826.—Anser ruficollis, Red-necked Bernacle-Goose, MacGillivray, Brit. Birds.

GENUS CXXII. CHENALOPEX. FOX-GOOSE.

The birds of this genus are similar in form to the Geese, but with the bill somewhat more depressed toward the end, and less narrowed, with the nail more curved, the lamellæ not apparent externally, the wings with a prominent rounded knob on the flexure, and the colours of the plumage more varied. Bill of nearly the same length as the head, stout, straight, subconical when viewed laterally, but when seen from above little narrower toward the end than at the base, where it is not much higher than broad; upper mandible with the basal margin thickened and fleshy, the ridge rather

broad and flattened at the base, gradually narrowed and convex, the dorsal line declinate, somewhat concave, the edges concealing the outer ends of the thin lamellæ, the unguis roundish, very convex, and much decurved; lower mandible with the intercrural space long, rather wide, and bare, the short dorsal line convex, the lower outline of the crura straight, the unguis broad, roundish, a little convex. Nostrils rather small, elliptical, submedial. Eyes small, eyelids feathered. Legs of moderate length, stout, placed well forward; tibia bare for a short space; tarsus moderately compressed, reticulated, but with the anterior scales scutelliform; hind toe very small, elevated, with a thick lobe beneath; the outer little shorter than the third; all scaly at the base, scutellate toward the end; interdigital membranes full, the outer emarginate; claws short, strong, little arched, obtuse. Plumage full, close, firm, blended; feathers of the head very small, of the neck narrow, blended; of the back oblong and rounded, of the sides broad and rounded; wings of moderate length, broad, rather pointed, the second quill longest; inner secondaries elongated; tail short, rounded, of fourteen broad feathers.

238. Chenalopex Ægyptiacus. Egyptian Fox-Goose.

Male about twenty-eight inches long; bill two inches and two-twelfths, reddish flesh-colour, with the unguis and part of the margin of the upper mandible black; feet reddish flesh-colour. A roundish space about the eye, with a band from thence to the base of the bill, and the feathers along the latter, light chestnut-red. The rest of the head cream-colour, shaded into glossy brownish-red along the hind part of the neck for half its length, when it enlarges and passes across the neck in front; throat reddish-white; fore part of back and scapulars brownish-red, undulated with dusky and grey, the larger scapulars chiefly red; the rest of the back and the tail-feathers glossy black; smaller wing-coverts white; secondary coverts white, with a transverse black band near the end; primary quills black tinged with brown, secondary greyish-black, but with part of their outer webs glossy deep green, and four of the inner grey internally, and light red on the outer web; the lower parts cream-colour, paler in the middle, on the sides finely undulated with brownish-grey;

on the fore part of the breast a large patch of deep chestnut-red; feathers under the tail pale yellowish-red. Female similar, but with the colours duller.

Male, 28, 58, $15\frac{3}{4}$, $2\frac{2}{12}$, 3, $2\frac{1}{2}$, $1\frac{6}{12}$.

The claims of this species to be admitted as British are somewhat similar to those of the Pheasant. Its proper country is Africa, over the whole extent of which it is said to occur, as well as, occasionally, in the south-eastern parts of Europe. But having been introduced into this country, it thrives remarkably well, and individuals are not unfrequently met with apparently wild.

Anas Ægyptiaca, Gmel. Linn. Syst. Nat. i. 512.—Anas Ægyptiaca, Lath. Ind. Ornith. ii. — Anser Ægyptiacus, Temm. Man. d'Ornith. iv. 523.—Chenalopex Ægyptiacus, Egyptian Fox-Goose, MacGillivray, Brit. Birds, v.

GENUS CXXIII. CYGNUS. SWAN.

This genus is formed of a small number of species, remarkable for their great size, they being the largest birds of the order to which they belong, and distinguishable from the Geese and other allied genera by the extreme bulk of their ovato-oblong, full, and somewhat depressed body, their excessively elongated and slender neck, and short, considerably depressed tarsi. Bill rather longer than the head, large, higher than broad at the base, gradually becoming more depressed, of nearly equal breadth throughout, and rounded at the end; upper mandible with the ridge broad and flattened at the base, gradually narrowed, convex toward the end, the dorsal line sloping, more or less concave, the unguis generally roundish, large, and convex, the edges straight, and concealing the narrow, blunt tips of the slender, little elevated lamellæ; lower mandible with the intercrural space very long, of moderate width, bare for two-thirds, the short dorsal line convex, the lower outline of the crura slightly rearcuate, the unguis roundish, and little convex. Mouth of moderate width; anterior palate deeply concave, with a medial row of prominent blunt tubercles, and on each side an oblique series of flattened tubercles, with obscure flattened lamellæ, and marginal little elevated lamellæ; tongue fleshy, thick, with the sides parallel, the

base and margins, as well as part of the upper surface, fringed with tapering horny papillæ, the tip thin, horny, rounded; œsophagus extremely long, narrow, dilated a little toward the furcula; proventriculus bulbiform; stomach an extremely developed, oblique, transversely elliptical gizzard, of which the lateral muscles are extremely thick, their tendons large, the epithelium forming two very thick, considerably concave, grinding surfaces; intestine long, rather narrow, arranged in sixteen folds; cœca long, narrow at the base, then of moderate width; cloaca oblong. Trachea considerably flattened, a little enlarged below, with the syrinx much compressed; the bronchi wide, enlarged, near the end. Nostrils elliptical, medial, near the ridge. Eyes small. Aperture of ear small. Legs short, stout, placed a little behind the centre of equilibrium; tibia bare for a very short space; tarsus considerably compressed, reticulated; hind toe very small and elevated, compressed beneath; anterior toes longer than the tarsus, the outer two nearly equal; all scutellate, unless toward the base; membranes full; claws strong, arched, compressed, rather obtuse, that of the third toe expanded and rounded. Plumage moderately full, close, firm, unless on the head and neck; wings very long, rather broad, convex, of about thirty-two quills; the second and third longest; tail short, rounded, of from eighteen to twenty-four feathers.

The Swans inhabit chiefly the temperate and cold parts of the globe; breed in the glacial regions, laying numerous elliptical, generally greenish-grey eggs. They walk slowly, but swim gracefully; sometimes feed on shore, but usually in the water, on the roots and submersed stems of plants, which their very long necks enable them to reach. Their food consists entirely of vegetable substances. In most of the species, the trachea enters the keel of the sternum and returns, before proceeding to the thorax. The young are generally grey, the adult white; but one species, the Australian, is black. In the adults is a large bare space at the base of the bill, extending to the eyes; but in the young it is covered with very small feathers.

239. Cygnus immutabilis. Changeless Swan.

Adult male about sixty inches in length, ninety-eight in extent of wings; bill from the joint to the tip of the upper mandible four inches and two-twelfths, from the knob three inches and a half, from the eye five inches and four-twelfths, its greatest breadth an inch and four and a half twelfths; the forehead elevated, with a compressed fleshy lobe occupying the basal angle of the bill; tarsus four inches and a quarter; middle toe five inches and eight-twelfths, its claw an inch; tail of twenty-four feathers, rounded; bare space on the forehead and between the eyes and bill black; bill orange-red, except the unguis, which is black, and of a narrow oblong form; feet dull grey; plumage pure white. Female similar to the male, but considerably smaller. Young said to be white in their first plumage, in which respect they differ from those of the tame Swan. The trachea does not enter the sternum. Œsophagus thirty-eight inches long; gizzard transversely and broadly elliptical, four inches and a quarter in breadth; intestine sixteen feet and a half in length; cœca fifteen inches long, rectum nine.

Male, 64, 96, 25, $4\frac{2}{12}$, $4\frac{1}{4}$, $5\frac{8}{12}$, $\frac{11}{12}$. Female, 58, 88.

This species was discovered, described, and named by Mr Yarrell, from specimens shot on the east coast of England. It differs little from the tame Swan, but has the knob at the base of the upper mandible smaller, and the feet dull grey, instead of being black. I have examined and minutely described two individuals, which were kept in the Edinburgh Zoological Gardens. One of the humeri of the male had been fractured and reunited; but how they were obtained I am unable to discover.

Cygnus immutabilis, Changeless Swan, Yarrell; also Mac-Gillivray, Brit. Birds, v.

240. Cygnus musicus. Whooping Swan.

Adult male about sixty inches in length, ninety-five in extent of wings; bill from the joint to the tip of the upper mandible three inches and a half, its greatest width about the middle an inch and a quarter; from the eye to the tip of the bill five inches and two-twelfths; tarsus four inches and two-twelfths; middle toe four inches and ten-twelfths, its claw an inch; tail of twenty feathers, rounded; bare space on the forehead and between the eyes and bill, bright yellow, as is the base of both mandibles, that colour extending in an angu-

lar form on the sides of the upper mandible to beyond the nostrils; feet black; plumage pure white, the head tinged with orange-red. Female similar, but considerably smaller. Young with the bill dusky at the end, reddish toward the base, the partially bare skin at its base flesh-colour; the feet reddish-grey; the plumage pale bluish-grey.

Male, 60, 95, $25\frac{3}{4}$, $3\frac{1}{2}$, $4\frac{2}{12}$, $\frac{5}{12}$, $1\frac{1}{12}$.

This, the common Wild Swan, arrives in Britain in the end of autumn, and departs in April. It is said to breed in the more northern regions of Europe and Asia; but does not occur in America. In severe weather it is often met with in great numbers on our estuaries, as well as inland. Its food consists chiefly of slender fleshy roots and stems of aquatic plants, often of Zostera marina. The œsophagus thirty inches long; stomach transversely elliptical, five inches in breadth; intestine thirteen feet long; cœca thirteen inches and a half; rectum ten. The trachea enters the crest of the sternum to the depth of three or four inches; the lower larynx, extremely compressed, an inch and two-twelfths in height, only two-twelfths in breadth, lies on the anterior edge of the sternum; the bronchi four inches long.

Anas Cygnus ferus, Linn. Syst. Nat. i. 194.—Anas Cygnus, Lath. Ind. Ornith. ii. 833.—Anas Cygnus, Temm. Man. d'Ornith. ii. 828.—Cygnus musicus, Whooping Swan, MacGillivray, Brit. Birds, v.

241. Cygnus Americanus. American Swan.

Adult male about fifty-four inches long, eighty-five in extent of wings; bill from the joint to the tip of the upper mandible three inches and four-twelfths, its greatest width near the end an inch and a quarter; from the eye to the tip of the bill four inches and nine-twelfths; tarsus four inches; middle toe four inches and three-fourths, its claw ten-twelfths; tail of twenty feathers, moderately rounded; bill and bare space on the fore part of the head black, with an oblong orange patch, never more than an inch in length, between the eye and the base of the bill; feet black; plumage pure white, the head tinged with orange-red. Female similar to the male, but considerably smaller. Young at first with the bill reddish-white, brown at the end; the feet light grey; the plumage of a deep leaden tint; in winter with the bill flesh-coloured, dusky toward the end; the feet dusky, the plumage light bluish-grey; the upper part of the head dusky-

grey, the feathers margining the forehead and cheeks reddish.

Male, 54, 86, 22½, 3¼, 4, 4$\frac{8}{12}$, 1$\frac{1}{12}$.

This species, common in North America, and first distinguished and minutely described by Dr Sharpless of Philadelphia, has not hitherto been observed in Europe. In February 1841, I obtained in Edinburgh, through the attention of my friend Mr Mactier, who purchased it for me from a poulterer, a young swan, which, having eighteen feathers in the tail, and being of small size, I supposed to belong to the next species. But, on dissecting it, I found differences indicative of a distinct species, and on comparing its sternum, windpipe, and digestive organs with those of Cygnus Americanus, I found it to belong to that species. It was a young male, of a very pale grey colour, with the head darker. Its dimensions were as follows:

Length 46½ inches; extent of wings 80; wing from flexure 20½; tail 5½; bill along the ridge 3$\frac{4}{12}$; from the joint 3$\frac{2}{12}$; from the eye 4$\frac{7}{12}$, its height at the base 1$\frac{4}{12}$, its breadth near the end 1$\frac{1}{4}$, about the middle 1$\frac{2}{12}$; tarsus 4; hind toe $\frac{7}{12}$, its claw $\frac{4}{12}$; second toe 3$\frac{7}{12}$, its claw $\frac{8}{12}$; third toe 4$\frac{8}{12}$, its claw $\frac{7}{12}$; fourth toe 4$\frac{4}{12}$, its claw $\frac{4}{12}$.

In the adult the trachea enters the crest of the sternum, extends beyond it, forming a horizontal loop, then returns, enters the thorax to the distance of two inches; the syrinx less compressed than in Cygnus musicus, being more than half an inch in breadth; the bronchi an inch and three-fourths long.

In the young individual mentioned above it entered the cavity in the crest of the sternum to the distance of three inches, forming a vertical loop, then entered the thorax to the distance of two inches; the bronchi an inch and a half in length. Œsophagus thirty-three inches long; the gizzard transversely elliptical, four inches and eight-twelfths in breadth; the intestine eleven feet ten inches in length; the cœca fifteen inches long; the rectum ten inches. The head and bill agreed precisely in every respect with a prepared head of a young Cygnus Americanus in my collection. But the very minute details and comparisons on which my opinion is founded would occupy too much space here.

Cygnus Americanus, Dr Sharpless, Amer. Journ. Science and Arts, vol. xxii.—Cygnus Americanus, Audubon, Amer. Ornith. Biogr. v. 133.—Cygnus Americanus, American Swan, MacGillivray, Brit. Birds, v.

242. Cygnus Bewickii. Bewick's Swan.

Male about forty-five inches long, seventy-four in extent of wings; bill from the joint to the tip of the upper mandible three inches, its greatest breadth toward the end an inch and a twelfth, from the eye to the tip of the bill four inches and five-twelfths; tarsus three inches and nine-twelfths; middle toe four inches and a half, its claw ten-twelfths; tail of twenty (often eighteen) feathers, much rounded; bare space on the forehead, and between the eyes and bill, bright yellow, as is the base of the upper mandible, that colour extending in an angular form, but not reaching the nostrils; feet black, plumage pure white, the head and neck tinged with orange-red. Female similar to the male, but considerably smaller. Young with the bill dusky at the end, flesh-coloured toward the base, the partially bare skin at its base flesh-colour; the feet reddish-grey; the plumage pale bluish-grey, the upper part of the head darker.

Male, 45, 74, 20½, 3, 4$\frac{9}{12}$, 4½, $\frac{1}{12}$.

This species, first distinguished by Mr Wingate, and compared, characterized, and described by Mr Yarrell, has frequently been shot in England, where it seems to be at least as common as Cygnus musicus. It appears to be equally so in Scotland. In 1836 I had an adult female, and in 1838 a male, both obtained in Edinburgh.

In the adult the trachea enters the crest of the sternum, extends beyond it, forming a horizontal loop, then returns, enters the thorax to the distance of about two inches; the syrinx compressed to half an inch; the bronchi an inch and a half long. In the young it enters the crest only, and its loop gradually extends, so as ultimately to reach within half an inch of the posterior extremity of the sternum.

In an adult male the œsophagus twenty-six inches long; the gizzard three inches and three-fourths in breadth; intestine eight feet and a half in length; cœca ten inches long. In a female the œsophagus twenty-five inches long; the gizzard three inches and a half in breadth; intestine eight feet in length; cœca nine inches and a half; rectum six and a half.

Cygnus Bewickii, Yarrell, Linn. Trans. xvi. 445.—Cygnus Bewickii, Temm. Man. d'Ornith. iv. 527.—Cygnus Bewickii, Bewick's Swan, MacGillivray, Brit. Birds, v.

FAMILY XLII. ANATINÆ. ANATINE BIRDS OR DUCKS.

Although a Goose is considerably different in appearance and habits from a Duck, yet the interval between the two birds being filled up by species gradually approximating to either, it is found that the entire series cannot be subdivided unless in a somewhat arbitrary manner; so that, in fact, there are no strictly defined limits between the Anserinæ and the Anatinæ. Ducks are merely small Geese, having the body more elongated, the neck shortened, the bill more depressed, the feet shorter, and the tarsi more compressed. Their general characters are the following:—Bill about the length of the head, or shorter, higher than broad at the base, gradually depressed, generally becoming a little broader toward the end, and sometimes more or less rearcuate; upper mandible with the frontal angles moderate and pointed, the ridge flattened at the base, the sides convex toward the end, the unguis oblong, decurved, and rather small. Mouth rather narrow; anterior palate concave, with a medial prominent line, and on each side a series of transverse, thin lamellæ; similar but smaller lamellæ on the sides of the lower mandible; tongue fleshy, deeply grooved above, with lateral series of bristles, and a thin broadly rounded tip; œsophagus of moderate width, or rather narrow; stomach a very large, transversely elliptical gizzard, placed obliquely, with very large muscles, thick rugous epithelium, and somewhat concave grinding surfaces; intestine very long, and of moderate width; cœca very long. Trachea of nearly uniform width, the lower larynx with an osseous enlargement, generally transverse, and bulging on the left side. Nostrils oblong, moderate or small. Eyes small. Legs short or

moderate; tibia bare for a very short space; tarsus short, compressed, reticulated, with very small anterior scutella; hind toe very small, elevated, with a lobiform membrane; inner toe much shorter than the outer, which is nearly equal to the third, all scutellate above; interdigital membranes full; claws small, compressed, little arched, rather acute, that of the middle toe expanded internally. Plumage dense, firm, elastic, soft, blended; feathers of the head and upper neck small, of the other parts large; scapulars large; wings moderate, rather narrow, pointed; first and second quills longest; inner secondaries oblong; tail moderate, nearly even, of more than twelve feathers.

The Anatinæ feed on seeds, roots, mollusca, insects, worms, and occasionally other substances. The males are always larger, and usually differently coloured. Some of the secondary quills are highly coloured, with silky or metallic lustre, forming what is technically named the speculum. Toward the end of summer, the males become similar to the females in plumage, but in autumn resume their proper colours. The nest is placed on the ground, or in holes; the eggs numerous, white, greenish, or of some uniform light tint. The young, covered with stiffish down, presently betake themselves to the water. Some of these birds occur in all climates, frequenting marshy places, lakes, and rivers. They procure a great part of their food by thrusting the head under the water, but they seldom dive.

GENUS CXXIV. TADORNA. SHIELDUCK.

The species of this genus bear a considerable resemblance in form to those of the genus Anser. The body is large, full, rather elongated, about the same height and breadth; the neck rather long and slender; the head moderate, oblong, compressed, rounded above. Bill as long as the head, higher than broad at the base, gradually depressed, consi-

derably rearcuate, and becoming a little broader toward the end, which is rounded; upper mandible with the dorsal line sloping to beyond the nostrils, then a little concave, at the end decurved, the ridge flattened at the base, and gradually narrowed, the unguis oblong, rather abruptly bent downwards and inwards, the edges sinuous, the lamellæ with their outer ends thin and not appearing beyond the margin. Mouth rather narrow; anterior palate concave, with a medial prominent line, and on each side a series of transverse, thin, elevated lamellæ, larger and more widely set toward the end. Digestive organs as in the character of the family. Trachea of nearly uniform width, a little enlarged at the lower part of the neck; the lower larynx with two unequal, irregularly roundish, extremely thin bony sacs; bronchi of moderate size. Nostrils oblong, moderate. Eyes rather small. Legs rather short; tibia bare for a considerable space; tarsus short, compressed, with very small anterior scutella; hind toe elevated, with a lobiform membrane, outer toe nearly as long as the third; all scutellate above; interdigital membranes full; claws small, compressed, little arched, rather blunt. Feathers of the head and upper neck short and very soft; scapulars large, oblong, rounded; wings rather long, broad, pointed, the second quill longest, the first a little shorter; inner secondaries elongated, oblong; tail moderate, nearly even, of fourteen weak rounded feathers.

The males differ from the females only in being larger, and in having the tints purer. They generally continue with the females, which deposit their numerous white or cream-coloured eggs in a hole in the ground, or a crevice in rocks. Their food consists of vegetable substances.

243. Tadorna Vulpanser. Burrow Shieldduck.

Male twenty-four inches long, with the bill rearcuate, and having a fleshy knob at the base above; the wing with a blunt tubercle, the tail of fourteen feathers; the bill bright red; the feet flesh-coloured; the head and upper neck black, glossed with green, the lower neck white; the fore part of the body light red; the rest of the plumage white, excepting a medial band on the breast and abdomen, a broad patch on

each side of the back, including the scapulars, and the primary quills and coverts, which are black; the outer secondaries green, some of the inner externally red, and the lower tail-coverts brownish-yellow. Female smaller, but similarly, though less brightly coloured, and without the fleshy knob on the forehead.

Male, 24, 46, $13\frac{1}{2}$, 5, 2, $1\frac{9}{12}$, $2\frac{2}{12}$, $\frac{5}{12}$.

This very beautiful bird is permanently resident in Britain, and is sparingly met with along our coasts, in most places suitable to its habits, from the south of England to the Shetland Islands on one side, and the northern Hebrides on the other. It seems to continue in pairs all the year round, although frequently in winter and spring large flocks may be seen. It feeds chiefly in wet pastures near the sea, in marshy places, and on wet sands. It walks with ease, and flies with speed, in the manner of the Mallard, with more rapid beats of the wings than the Geese. The nest is placed in a hole in the sand or pasture-ground, near the shore, and is lined with down. The eggs, from eight to twelve, are oval, smooth, glossy, thin-shelled, white, slightly tinged with red; their length about two inches and nine-twelfths, their breadth an inch and ten-twelfths. The young presently betake themselves to the sea or marshes.

Shieldrake. Skeldrake. Skelgoose. Skeeling Goose. Burrow Duck. St George's Duck. Sly Goose. Bergander. Stockannet.

Anas Tadorna, Linn. Syst. Nat. i. 195.—Anas Tadorna, Lath. Ind. Ornith. ii. 854.—Anas Tadorna, Temm. Man. d'Ornith. ii. 833.—Tadorna Vulpanser, Burrow Shielduck, MacGillivray, Brit. Birds, v.

244. Tadorna Casarca. Ruddy Shielduck.

Male twenty-three inches long, with the bill very slightly rearcuate, destitute of basal protuberance; the wing with a blunt tubercle; the tail of fourteen feathers; the bill and feet black; the head and upper half of the neck pale grey, the latter tinged with yellow; a narrow collar of greenish-black; the rest of the neck, and the upper and lower parts of the body light yellowish-red; the hind part of the back and the tail greenish-black; the wing-coverts white; the primary quills and coverts black, the secondary quills deep purplish-green. Female smaller, similarly coloured, but without grey on the head, it being pale yellow, and the dark collar wanting.

Male, 23, . ., 13, $1\frac{3}{4}$, $2\frac{3}{12}$, $2\frac{1}{12}$, $\frac{5}{12}$.

This species is very extensively dispersed, being found in India, Persia, and the northern parts of Asia; at the Cape of Good Hope, and in other portions of Africa; in Austria, Hungary, and Russia. It is said to nestle in the holes of rocks, or trees, or in burrows of animals, and to lay eight or nine white eggs. On the western coasts of Europe it sometimes appears as an accidental straggler; and a very few individuals have been met with in England, one of which is in the Newcastle Museum, another in the possession of Mr Selby.

Ruddy Goose. Grey-headed Goose.

Anas Casarca, Linn. Syst. Nat. iii. App. 224.—Anas Casarca, and Anas cana, Lath. Ind. Ornith. ii. 800, 844.—Anas rutila, Temm. Man. d'Ornith. ii. 832.—Tadorna Casarca, Ruddy Shielduck, MacGillivray, Brit. Birds, v.

GENUS CXXV. ANAS. DUCK.

The Ducks have the body large, ovato-elliptical, considerably elongated, about the same height and breadth; the neck rather long; the head oblong, compressed, of moderate size. Bill about the length of the head, higher than broad at the base, gradually depressed, becoming a little broader toward the end, and very slightly rearcuate; upper mandible with the frontal angles short and pointed, the dorsal line sloping to beyond the nostrils, then nearly straight, the ridge flattened and gradually narrowed, the unguis obovate, decurved, the sides convex, unless at the base, the lamellæ with their outer ends thin, and scarcely apparent externally. Mouth rather narrow; digestive organs as in the character of the family. Trachea of nearly uniform width; the lower larynx with a transversely oblong bony expansion, forming a bulging and rounded sac on the left side. Nostrils elliptical, moderate, subbasal. Eyes rather small. Legs short; tibia bare for a very short space; tarsus short, compressed, anteriorly with small scutella; hind toe very small, elevated, with a narrow membrane; fourth toe a little shorter than third; all scutellate; interdigital membranes full; claws small, compressed, arched, rather blunt. Feathers of the head and upper neck short and blended; scapulars large,

oblong; wings of moderate length and breadth, pointed; the second quill longest; the first little shorter; inner secondaries elongated, oblong, broad, rather pointed; tail short, much rounded, of eighteen or twenty acute feathers.

The males are larger and differently coloured. The food consists of seeds and other vegetable substances, worms, insects, reptiles, and small fishes. The nest is placed on the ground, and the eggs are numerous, white, or greenish.

245. Anas Boschas. Mallard Duck.

Male with the bill greenish-yellow; the feet orange; the head and upper part of the neck glossy deep green; a narrow white collar; the lower part of the neck and a portion of the breast dark brownish-chestnut; lower parts greyish-white, very minutely undulated with grey; fore part of the back brown; scapulars grey and brown, minutely undulated; hind part of the back black; wings brownish-grey; speculum bluish-green and purple, margined before and behind with black and white; tail feathers twenty, brownish-grey, broadly edged with white, the four medial recurved, reduplicate, compressed, and black. Female smaller, with the bill greenish-grey; the feathers of the upper parts dusky-brown, edged with pale reddish; the throat whitish; the lower parts greyish-yellow, streaked and spotted with dusky; the speculum as in the male; the medial tail feathers straight. Young like the female.

Male, 24, 35, 11, $2\frac{4}{12}$, $1\frac{9}{12}$, 2, $\frac{5}{12}$. Female, 22, 33.

This species, the original of our domestic duck, occurs in variable numbers in all parts of the country, being more abundant in marshy and thinly peopled districts. In winter it for the most part removes from the higher grounds to the hollows and level tracts, and in frosty weather betakes itself to the shores of estuaries and even of the open sea. It is chiefly at night that it searches for its food, which consists of seeds, grasses, roots, mollusca, insects, small fishes, and small reptiles. The nest is placed on the ground, in rare instances on trees. The eggs, from four to ten, are greenish-white, two inches and a quarter in length, an inch and nine-twelfths in breadth. The young swim and dive with great activity from the first. The flesh being in great request, vast numbers are caught in decoys, and more shot. It being more numerous in winter than in summer, there is probably an autumnal

immigration from the continent. The species is extensively dispersed in North America, as well as in Europe.

Wild Duck.

Anas Boschas, Linn. Syst. Nat. i. 205.—Anas Boschas, Lath. Ind. Ornith. ii. 850.—Anas Boschas, Temm. Man. d'Ornith. ii. 835.—Anas Boschas, Mallard Duck, MacGillivray, Brit. Birds, v.

GENUS CXXVI. QUERQUEDULA. TEAL.

The Teals differ from the Ducks in being of a somewhat more slender form, with the neck generally longer, the bill much narrower, and the scapulars and inner secondaries more elongated and pointed. The bill is nearly as long as the head, considerably higher than broad at the base, gradually depressed toward the end, but scarcely widened, it being comparatively slender, with the margins nearly parallel; upper mandible with the frontal angles short and pointed, the dorsal line sloping to beyond the nostrils, then nearly straight to the unguis, which is small, obovato-oblong, decurved at the end, the ridge broad and concave at the base, gradually narrowed, the sides convex unless at the base, the edges nearly straight, the extremities of the numerous lamellæ rounded or moderately pointed, and projecting more or less. Mouth rather narrow; digestive organs as in the character of the family. Trachea a little enlarged at the lower part of the neck; the inferior larynx with an enlargement formed by several of the lower rings united, and on the left side a rounded or ovate thin bony expansion of rather large size. Nostrils rather small, oblong. Eyes small. Legs very short; tarsus compressed, with small anterior scutella; hind toe very small, with a very narrow membrane; outer toe considerably shorter than the third; interdigital membranes emarginate; claws small, slightly arched, compressed, rather acute. Feathers of the head and upper neck short; scapulars elongated and acuminate; wings rather long, narrow, pointed, of twenty-five quills; the first and second longest; inner secondaries elongated and tapering; tail small, short, or moderate, tapering, of sixteen stiffish, acuminate feathers.

The males have the scapulars, inner secondaries, and tail-feathers, more elongated and acuminate than the females, from which they also differ in having the colours of the plumage more varied. They frequent marshes, lakes, and rivers; feed on vegetable substances, mollusca, insects, worms, and other small animals; walk well, swim with ease, seldom dive, fly with great rapidity; nestle on the ground, laying numerous white or whitish eggs; and are highly esteemed as food.

246. Querquedula Crecca. European Teal.

Male with the bill an inch and a half long, seven-twelfths broad toward the end, black; a longitudinal ridge of narrow decurved feathers on the head and nape; head and upper neck chestnut-brown, with a green patch behind the eye, margined beneath with black and white; upper parts and sides finely undulated with dusky and white; scapulars partly grey, yellowish-white, and black; speculum black externally, green internally, edged with black; tips of secondary coverts yellowish-white; fore-neck and part of breast yellowish-white, with black spots, the rest of the breast white; abdomen undulated; under the tail, a black and two cream-coloured patches. Female smaller, with the throat white; the upper parts and neck dusky-brown, the feathers edged with pale reddish; breast and abdomen yellowish-white; speculum as in the male.

Male, $14\frac{1}{2}$, 24, $7\frac{1}{2}$, $1\frac{1}{2}$, $1\frac{2}{12}$, $1\frac{4}{12}$, $\frac{5}{12}$. Female, $13\frac{1}{2}$, 22.

This beautiful and active species, the smallest British bird of its family, frequents marshy places, the margins of lakes and rivers, seldom betaking itself to estuaries, or to the open sea-coast, unless in time of frost. Its food consists of seeds of grasses, slender roots, insects, mollusca, and worms. In winter its numbers are greatly augmented by individuals from the continent, and it is generally dispersed, although not common in the northern parts of Scotland. Its flesh is highly esteemed, and is perhaps superior to that of any other British duck. The nest is placed on the ground, and lined with down. The eggs, eight or ten, are yellowish-white, an inch and three-fourths in length, an inch and a third in breadth.

Common Teal. Green-winged Teal.

Anas Crecca, Linn. Syst. Nat. i. 204.—Anas Crecca, Lath. Ind. Ornith. ii. 872.—Anas Crecca, Temm. Man. d'Ornith.

ii. 846.—Querquedula Crecca, European Teal, MacGillivray, Brit. Birds, v.

247. Querquedula Circia. Garganey Teal.

Male with the bill an inch and two-thirds long, seven-twelfths and a half broad toward the end, blackish-brown; scapulars and inner secondaries elongated and tapering; tail-feathers acuminate; upper part of the head and a band along the hind-neck umber-brown; a white band over the eye and along the neck; cheeks and upper part of neck chestnut-brown, finely barred with white; throat black; upper parts greyish-brown glossed with green, the feathers edged with paler; scapulars black, with a medial white streak; wing-coverts pale bluish-grey; speculum green, margined before and behind with white; fore-neck, and part of breast pale yellow, with semicircular black bars, the rest of the breast white; abdomen undulated; lower tail-coverts yellowish-white, with black spots. Female with the throat white, fore-neck streaked and spotted with dusky, lower parts white, the sides and abdomen spotted with brown; upper parts deep-brown, the feathers edged with white; wing-coverts brownish-grey; speculum duller than in the male. Young similar to the female, but with the colours darker, the speculum greenish-brown.

Male, 16½.

The Garganey is met with only in small numbers, in winter and spring, in various parts of England; but had not, I believe, been observed in Scotland until March 1841, when four individuals, said to have been shot near Stirling, were exposed for sale in the Edinburgh market. It is uncertain whether individuals remain to breed or not.

Garganey. Pied Wigeon. Cricket Teal.

Anas Circia and Querquedula, Linn. Syst. Nat. i. 203, 204.—Anas Circia and Querquedula, Lath. Ind. Ornith. ii. 873.—Anas Querquedula, Temm. Man. d'Ornith. ii. 844.—Querquedula Circia, Garganey Teal, MacGillivray, Brit. Birds, v.

248. Querquedula glocitans. Bimaculated Teal.

Male with the bill an inch and ten-twelfths long, greenish-yellow at the base, olive-brown toward the end; scapulars and inner secondaries elongated and tapering; tail-feathers acuminate; upper part of head and hind-neck deep chestnut-brown; sides of the head and upper neck glossy green; on the fore part of the cheek an oblong reddish-brown patch,

another on the side of the neck; throat greenish-black; lower fore part of the neck brownish-red, spotted with black; lower parts yellowish-white, minutely undulated with black; feathers under the tail black; fore part of back and inner scapulars yellowish-grey, finely undulated with black; outer scapulars black externally, light red on the inner web; wing-coverts brownish-grey, the secondary coverts tipped with reddish-white; primary quills and coverts brownish-grey; speculum deep green, glossed with purple, and margined behind with white; hind part of back and tail-coverts greenish-black; tail feathers brownish-grey, except the two middle, which are black. Female with the throat yellowish-white; fore-neck, part of breast, and sides, light reddish-brown, spotted with dusky-brown; breast and abdomen white, the latter with faint brown spots; upper parts deep brown, the feathers edged with yellowish-grey; wing-coverts brownish-grey; the speculum duller than in the male.

Male, 20.

Only three individuals of this species have hitherto been obtained in England. Of these, one, a male, was taken in a decoy, in 1771, and described and figured by Pennant. A male and a female, caught in the same manner, near Maldon, in Essex, in 1812, were described by Mr Vigors, and presented by him to the Zoological Society. The species is said to inhabit the northern parts of Asia.

Anas glocitans, Gmel. Syst. Nat. i. 526.—Anas glocitans, Lath. Ind. Ornith. ii. 862.—Anas glocitans, Temm. Man. d'Ornith. iv. 533.—Querquedula glocitans, Bimaculated Teal, MacGillivray, Brit. Birds, v.

249. Querquedula strepera. Gadwall Teal.

Male with the bill an inch and ten-twelfths long, eight-twelfths broad toward the end, black; scapulars and inner secondaries elongated and acuminate; middle tail-feathers pointed, but not much longer than the next; upper part of the head and nape dusky, with small reddish-brown markings; lower neck all round and part of the back dusky, with semicircular white lines; middle of the back, scapulars, and sides finely undulated with dusky-grey and reddish-white; smaller wing-coverts grey, barred with pale reddish; middle coverts deep chestnut-red; speculum black and white; hind part of back and lower tail-coverts bluish-black; tail grey. Female with the scapulars, inner secondaries, and tail-feathers less elongated; upper part of the head dusky; a lightish

streak over the eye; the upper parts blackish-brown, the feathers edged with reddish; the lower parts light reddish, marked with oblong spots of greyish-brown.

Male, 21, 34, $10\frac{5}{12}$, $1\frac{1}{12}$, $1\frac{1}{2}$, $1\frac{1}{12}$, $\frac{5}{12}$. Female, 19, 30.

The Gadwall can scarcely be considered as a regular winter visitant, it being very seldom met with near the eastern coasts of England, and that chiefly in spring; nor has it hitherto occurred in Scotland. It is said to be very abundant in Holland, and to be extensively dispersed over the continent. It also occurs in North America.

Gadwall. Grey.

Anas strepera, Linn. Syst. Nat. i. 200.—Anas strepera, Lath. Ind. Ornith. ii. 859.—Anas strepera, Temm. Man. d'Ornith. ii. 837.—Querquedula strepera, Gadwall Teal, MacGillivray, Brit. Birds, v.

250. QUERQUEDULA CAUDACUTA. PINTAIL TEAL.

Male with the bill two inches and two-twelfths long, nine-twelfths broad toward the end, black with the sides toward the base light blue; scapulars and inner secondaries elongated and acuminate; middle tail-feathers long and tapering to a fine point; head and throat dusky-brown; a longitudinal band of greenish-black on the hind-neck, and two white bands continuous with the white of the lower part; back and sides finely undulated with grey and white; smaller wing-coverts grey; speculum green and black, margined anteriorly with red and posteriorly with white; tail grey, middle feathers brownish-black; lower tail-coverts black, the outer partially white. Female with the scapulars, inner secondaries, and tail-feathers less elongated; the head and neck light reddish, streaked with dusky; the upper parts blackish-brown, the feathers edged and variously barred with reddish-white; the lower parts yellowish-white, marked with oblong spots of greyish-brown.

Male, 25, 35, $11\frac{1}{2}$, $2\frac{2}{12}$, $1\frac{1}{2}$, $1\frac{1}{12}$, $\frac{5}{12}$. Female, 21, 33.

This elegantly-formed and beautifully-coloured species is not uncommon in winter and spring in some parts of England, but is of very rare occurrence in the south of Scotland, and has not been met with in its northern islands. It is extensively dispersed over the continents of Europe and Asia, and not less so over that of North America.

Pintail Duck. Winter Duck.

Anas acuta, Linn. Syst. Nat. i. 202.—Anas acuta, Lath. Ind. Ornith. ii. 864.—Anas acuta, Temm. Man. d'Ornith. ii.

839.—Querquedula caudacuta, Pintail Teal, MacGillivray, Brit. Birds. v.

GENUS CXXVII. RHYNCHASPIS. SHOVEL-BILL.

In this genus, which differs little from Querquedula, unless in the expanded form of the bill toward the end, and the remarkable elongation of the extremely attenuated lamellæ, the body is elongated, elliptical, slightly depressed, and moderately full; the neck rather long and slender; the head oblong, much compressed, little elevated above. Bill longer than the head, much higher than broad at the base, gradually depressed and widened toward the end, the breadth of which is double that of the base; upper mandible with the dorsal line gently sloping and nearly straight to the unguis, which is small, oblongo-obovate, decurved at the end, the ridge broad and concave at the base, gradually narrowed, the sides at the base erect, toward the end spreading and convex, the edges sinuate, the very numerous, elongated, slender lamellæ projecting conspicuously from the base to near the broadest part, beyond which they are incurved; lower mandible less dilated. Mouth rather narrow; tongue fleshy, with marginal slender lamellæ and bristles, its breadth increasing to the end, where it is abrupt, but with a semicircular flattened tip; œsophagus of moderate width; proventriculus oblong; stomach a very muscular, roundish gizzard, placed obliquely, with longitudinally rugous epithelium, and thick grinding plates; intestine extremely long and slender; cœca long, rather narrow. Trachea slowly enlarging from the top; inferior larynx with a rounded bony expansion, comparatively small, on the left side; bronchi large. Nostrils rather small, elliptical. Eyes small. Aperture of ear very small. Legs very short; tarsus compressed, with small anterior scutella; hind toe very small, with a very narrow membrane; outer toe a little shorter than the third; interdigital membranes emarginate; claws slender, compressed, acuminate, moderately arcuate. Plumage dense, soft, glossy; scapulars elongated and acuminate; wings of moderate length, narrow, pointed, of twenty-five quills; first and second quills

longest; inner secondaries elongated and tapering; tail small, much rounded, of fourteen stiffish, tapering feathers.

In this genus the lamellæ of the mandibles receive their highest degree of development as to elongation. They appear to be thus modified to be adapted for separating from the mud the insects, mollusca, worms, and the like, on which, more than on vegetable substances, the Shovel-Bills feed. The male is larger, and more highly coloured than the female.

251. Rhynchaspis clypeata. Blue-winged Shovel-bill.

Male with the bill greyish-black, two inches and a half long, an inch and a quarter in breadth near the end; feet orange-red; head and upper neck glossed with green and purple; lower neck white; breast purplish-chestnut; back greenish-black; smaller wing-coverts light blue; scapulars white, greenish-black and pale blue; speculum bright green, margined anteriorly with white; tail short, much rounded, of fourteen pointed feathers. Female with the bill dusky above, reddish-brown beneath; the head and upper neck pale reddish, streaked with dusky, the lower neck and breast similar, with dusky spots; feathers of the upper parts blackish-brown, edged with reddish-white; smaller wing-coverts faintly tinged with light blue; speculum duller and of less extent than in the male.

Male, 20, 32, $9\frac{3}{4}$, $1\frac{7}{12}$, $1\frac{4}{12}$, $1\frac{3}{12}$, $\frac{5}{12}$. Female, 18, 29.

Rare in Britain, where it is met with chiefly in winter, and for the most part in the eastern counties. Some pairs remain and breed in the marshy parts of the county of Norfolk. In Scotland it has not, I believe, been met with. It is said to be common in Holland, France, and Germany, and to occur in various parts of Asia, Africa, and America. The nest is placed on the ground, among rushes or other tall plants. The eggs, ten or twelve, are greenish-white, two inches and two-twelfths in length, an inch and a half in breadth.

Shoveller. Broad-bill. Red-breasted or Blue-winged Shoveller.

Anas clypeata, Linn. Syst. Nat. i. 200.—Anas clypeata, Lath. Ind. Ornith. ii. 856.—Anas clypeata, Temm. Man. d'Ornith. ii. 842.—Rhynchaspis clypeata, Blue-winged Shovel-bill, MacGillivray, Brit. Birds, v.

GENUS CXXVIII. MARECA. WIGEON.

The Wigeons are in all respects similar to the Teals, with the exception of having the bill shorter, proportionally broader, and rather narrowed, instead of becoming broader, toward the end. They have the bill considerably shorter than the head, higher than broad at the base, gradually depressed and a little narrowed toward the end; upper mandible with the dorsal line gently sloping at first, then slightly concave and still sloping to the unguis, which is rather large, obovate, decurved at the end, the ridge broad and flattened at the base, the edges slightly sinuous, the extremities of the numerous lamellæ narrow but rounded, and about the middle of the mandible projecting a little; lower mandible almost straight, with the unguis large, roundish, and little convex. Mouth rather narrow; tongue fleshy, with marginal slender lamellæ and filaments, its tip thin and rounded; œsophagus of moderate width, considerably enlarged before entering the thorax; proventriculus oblong; stomach a very large, transversely elliptical gizzard, placed obliquely, with very large muscles, and thick rugous epithelium, forming two roundish, flat, grinding surfaces; intestine very long, rather wide, enlarging toward the cœca, which are very long and of moderate width. Trachea nearly uniform; the lower larynx with several rings united so as to form an irregular dilatation, bulging into a rounded sac on the left side; bronchi of moderate length and width. Nostrils elliptical, subbasal. Eyes small. Legs very short; tibia bare for a short space; tarsus compressed, with small anterior scutella; hind toe very small, with a narrow lobe; outer toe considerably shorter than the third; interdigital membranes full; claws small, well-arched, compressed, acute. Plumage dense, soft, and blended; feathers of the head and upper neck softer; scapulars elongated and acuminate; wings rather long, narrow, pointed, of twenty-five quills; the first and second primaries longest; inner secondaries elongated, and acuminate; tail small, short, tapering, of sixteen stiffish, acuminate feathers.

The male is larger and more highly coloured than the

female. The Wigeons frequent marshy places, pools, lakes, and rivers; feed on seeds, grass, roots, insects, and mollusca; immerse their necks while swimming; walk with ease, often betaking themselves to dry pastures, and have a rapid flight.

252. Mareca Penelope. European Wigeon.

Male with the bill an inch and two-thirds long, from eight and a half to seven and a half twelfths broad; scapulars and inner secondaries elongated and tapering; tail-feathers moderately acuminate; a longitudinal ridge of rather elongated decurved feathers on the head and nape; bill pale blue with the tip black; upper part of head reddish-white; cheeks and upper neck brownish-red, dotted with black; a longitudinal band of the latter on the throat; fore part and sides of the lower neck light vinaceous; upper parts and sides below the wings finely barred with white and dark grey; wings grey, with a large patch of white; the speculum green, with an anterior and a posterior band of black; inner secondaries white, grey, and black; tail grey; upper tail-coverts partly black; breast and abdomen white; feathers under the tail black. Female smaller, with the head and upper neck yellowish-red, with small greenish-black spots, the feathers being barred with that colour; upper parts of the body dusky-brown, the feathers edged and barred with brownish-red; wings dusky-grey, many of the coverts tipped with white; speculum greyish, without lustre; tail-feathers brownish-grey, edged with brownish-white; fore-neck obscurely barred with reddish-brown and brownish-grey; breast and abdomen white; under tail-feathers barred with brown, as are the smaller lower wing-coverts, the larger pale grey.

Male, $20\frac{3}{4}$, 35, $10\frac{3}{4}$, $1\frac{7}{12}$, $1\frac{1}{2}$, $1\frac{1}{4}$, $\frac{4}{12}$. Female, 19, 32.

The Wigeons begin to make their appearance in Britain toward the end of September, and depart in the end of March or beginning of April. They are generally dispersed, in the northern parts rare, but very abundant in the southern, not only frequenting rivers and lakes, but also estuaries and the open coasts. Their food consists chiefly of vegetable substances, and their flesh is highly esteemed.

Common Wigeon. Whew Duck. Paudle Whew. Yellow Poll. Red-headed Wigeon. Baldpate. Whewer. Whim.

FAMILY XLIII. FULIGULINÆ. FULIGULINE BIRDS, OR SCAUP-DUCKS.

In popular language the Fuligulinæ are named Ducks as well as the Anatinæ, and in truth the differences between the two groups are very slight. The Fuligulinæ, however, may be distinguished by their having the body shorter, fuller, and more depressed, their neck shorter and thicker, and by their having appended to the hind toe a distinct membranous lobe, much larger than that of the Anatinæ. They may be characterized as follows:—Bill about the length of the head, or shorter, nearly as broad as high at the base, gradually depressed, and rounded; upper mandible with the frontal angles various, the ridge flattened at the base, the sides convex toward the end, the unguis obovate or roundish, decurved, usually large, sometimes small. Mouth rather narrow; anterior palate concave, with a medial prominent line, and on each side a series of transverse thin lamellæ; similar but smaller lamellæ on the sides of the lower mandible; tongue fleshy, deeply grooved above, with lateral series of bristles, and a thin broadly rounded tip; œsophagus of moderate width, or rather narrow; stomach a very large, transversely elliptical gizzard, placed obliquely, with very large muscles, thick rugous epithelium, and somewhat concave grinding surfaces; intestine very long, and of moderate width; cœca long. Trachea often with dilatations, the lower larynx with a very large osseous or partly membranous dilatation, bulging more on the left side. Nostrils oblong, moderate, or small. Eyes small. Legs very short, and placed rather far behind; tarsus very short, compressed, with anterior small scutella; hind toe small, with an inferior compressed lobe; two outer toes about equal, and longer than the tarsus; interdigi-

tal membranes full; claws small, slender, arched, compressed, obtuse, that of the third toe with the inner edge expanded. Plumage dense, elastic, soft, glossy; feathers of the head and neck slender and blended; wings short, convex, narrow, pointed, the first and second quills longest; inner secondaries elongated and tapering; tail generally small, much rounded, or tapering.

The Fuligulinæ are for the most part marine birds, inhabiting bays and estuaries, where they dive in shallow water in quest of their food, which consists of sea-plants, mollusca, and crustacea. Some of them approaching nearer to the Anatinæ, are often seen on fresh water, where they feed chiefly on mollusca. They are all expert divers, swim with ease, sit low on the water, owing to the breadth of their bodies, walk little and ungracefully, but have a rapid direct flight. They nestle on the shores of the sea, on islands, or by fresh-water lakes or rivers, often lining their nests with down plucked from their bodies. The eggs are moderately numerous, smooth, thin-shelled, of one colour, white or greyish, greenish or bluish. The young betake themselves to the water presently after birth. The males desert the females when incubation has commenced. The flesh of these birds is generally rank and very dark coloured, but that of some is highly esteemed on account of its peculiarly rich flavour. The species are pretty numerous, and scarcely two agree precisely in the form of the bill, so that genera have been very unnecessarily multiplied.

GENUS CXXIX. SOMATERIA. EIDER-DUCK.

Birds of large size, having the body of an elliptical form, bulky, and much depressed; the neck of moderate length and thick; the head large, oblong, and compressed. Bill nearly as long as the head, higher than broad at the base, depressed toward the end, where it is considerably narrowed, but rounded; upper mandible with the lateral sinus very

large, the upper very long and narrow, the frontal angles very long, narrow, soft, and tumid, as is the ridge as far as the nostrils, the dorsal line straight and sloping to the unguis, which is extremely large, elliptical, convex, moderately decurved; lower mandible with the intercrural space long, pointed, partially bare, the outline of the crura nearly straight, the unguis very large, broadly elliptical, little convex. Mouth of moderate width; anterior palate concave, with lateral slender lamellæ not projecting; tongue fleshy, very thick, with a deep median groove, two lateral series of bristles, and a semicircular thin-edged tip; œsophagus of moderate width, a little enlarged; proventriculus oblong; stomach an extremely large gizzard, situate obliquely, transversely elliptical, with very large muscles, thick, dense epithelium, and elliptical grinding plates; intestine long, of moderate width; cœca moderate. Trachea of nearly uniform width, but with a transversely oblong dilatation at the lower end, projecting more to the left side; bronchi very wide. Nostrils large, oblongo-elliptical, submedial. Eyes small. Aperture of ear small. Legs very short, placed rather far behind; a very small part of the tibia bare; tarsus compressed, anteriorly scutellate; hind toe small, with a broad lobiform membrane, connected at the base with the loose bilobate membrane of the second toe; anterior toes long, the third double the length of the tarsus; interdigital membranes emarginate; claws small, compressed, arcuate, obtuse, that of the third toe internally expanded. Plumage close and dense; feathers of the head short, soft, blended; wings rather short, very concave, narrow, pointed; second quill longest; nine secondaries elongated, tapering, curved outwards; tail very short, rounded, slightly decurvate, of sixteen stiffish pointed feathers.

The males have the plumage variegated with white and black. These birds inhabit the arctic regions of both continents, are strictly marine, and feed on mollusca, crustacea, and radiata; swim and dive with ease, and have a strong, rapid flight.

253. SOMATERIA MOLLISSIMA. WHITE-BACKED EIDER.

Male with the frontal angles of the bill very narrow, and,

though fleshy, little elevated, the head black above, with a medial white band, the hind part of the cheeks and nape pale green; the throat, hind-neck, back, scapulars, smaller wing-coverts, and inner secondary quills white; the breast, sides, abdomen, and rump black; the fore-neck cream-coloured; the tail of sixteen feathers, greyish-brown. Female with the frontal angles less elevated, and shorter; the head and neck pale reddish-brown, finely streaked with dusky; the lower parts similarly coloured, but with the markings transverse, and the ground-colour passing gradually into dusky-brown; the upper parts dark brown, transversely lunulated with light red. Young nearly similar to the female.

Male, 26, 40, $11\frac{1}{2}$, $2\frac{2}{2}$, $1\frac{1}{12}$, $2\frac{1}{2}$, $\frac{5}{12}$.

Abundant in the arctic regions of both continents. Many breed in various parts of Scotland, more especially in the northern isles. It is not uncommon even in the Frith of Forth, particularly about North Berwick and on the opposite coast of Fife. The nest is formed of dried plants and bits of turf; and the eggs, from five to eight, are of a longish oval form, smooth, glossy, pale greenish-grey, three inches in length, nearly two inches in breadth. When they have been laid, the female plucks the down from her breast, and deposits it among them. The flesh of this species is tolerably good.

Eider Duck. St Cuthbert's Duck. Dunter Goose.

Anas mollissima, Linn. Syst. Nat. i. 338.—Anas mollissima, Lath. Ind. Ornith. ii. 845.—Anas mollissima, Temm. Man. d'Ornith. ii. 848.—Somateria mollissima, White-backed Eider, MacGillivray, Brit. Birds, v.

254. Somateria spectabilis. Black-backed Eider.

Male with the frontal angles of the bill very broad, rounded, fleshy, and much elevated, so as to form a large compressed protuberance; the upper part of the head and nape greyish-blue; the cheeks pale green; the throat white, with two bands of black meeting anteriorly at a very acute angle; the hind-neck and part of the back white, the fore-neck richly cream-coloured; the back, scapulars, and inner secondary quills black, as are the breast, sides, abdomen, and rump; a spot on each side of the latter, and the middle smaller wing-coverts, white; tail of fourteen feathers. Female with the frontal angles less elevated and shorter; the head and neck pale reddish-brown, finely streaked with dusky; the lower parts similarly coloured, but with the markings transverse, and the ground-colour passing gradually into dusky-brown;

the upper parts dark brown, transversely lunulated with light red. Young nearly similar to the female.

This species has been met with very rarely in Shetland and Orkney, but nowhere else in Britain. In many parts of the arctic regions of both continents it is, however, abundant. The nest and eggs are similar to those of the common species, but the latter are smaller.

Ring Duck.

Anas spectabilis, Linn. Syst. Nat. i. 195.—Anas spectabilis, Lath. Ind. Ornith. ii. 845.—Anas spectabilis, Temm. Man. d'Ornith. ii. 851.—Somateria spectabilis, Black-backed Eider, MacGillivray, Brit. Birds, v.

GENUS CXXX. OIDEMIA. SCOTER.

The species of this genus are of large size, although inferior to the Eiders, to which they seem to approximate in some respects. They have the body very bulky and much depressed; the neck of moderate length and thick; the head large, oblong, compressed. Bill nearly of the same length as the head, as high as broad at the base, depressed and flattened toward the end, which is rounded; upper mandible with a prominence at the base above, and two lateral protuberances, the dorsal line rapidly sloping to beyond the nostrils, then somewhat concave to the unguis, which is very large and broadly elliptical, the ridge broad and flattened at the base, broadly convex toward the end, the edges thin, with the lamellæ not projecting; lower mandible with the crura rearcuate, the unguis very large and broadly elliptical. Mouth of moderate width; anterior palate broadly concave, with a median prominent line, on which are some tubercles, and from thirty to forty marginal lamellæ; tongue large, fleshy, with numerous basal papillæ, a deep median groove, two lateral series of bristles, and a thin rounded tip; œsophagus wide; stomach a powerful gizzard of a roundish form, with very large lateral muscles, longitudinally rugous epithelium, and thick grinding plates; intestine of moderate length, wide; cœca rather long, narrow. Trachea with two abrupt bony expansions, one at the upper larynx, the other roundish and flattened; lower larynx large, but symmetrical; bronchi wide. Nostrils elliptical,

subbasal. Eyes rather small. Aperture of ear small. Legs very short, placed rather far behind; tarsus compressed, with small scutella; hind toe small, slender, with a pretty large membrane; anterior toes nearly double the length of the tarsus; interdigital membranes full; claws small, slightly arcuate, compressed, obtuse. Plumage full, dense, and soft; wings rather short, convex, narrow, pointed; the first and second quills longest; inner secondaries oblong; tail very short, narrow, much rounded, or tapering, of fourteen or sixteen stiffish, narrow, obtusely pointed feathers.

The Scoters inhabit the open sea or estuaries during the greater part of the year, feeding chiefly on bivalve mollusca, for which they dive in shallow or moderately deep water. In summer they betake themselves to the arctic regions, where they nestle on the shores of the sea, lakes, or marshes, forming a bulky nest lined with down, and laying from five to eight whitish eggs.

255. Oidemia fusca. Velvet Scoter.

Male with the bill protuberant and sloping at the base above, the rounded lateral protuberances partially feathered, the base and margins of both mandibles black, the unguis of each red, the sides of the upper orange; inner side of the tarsus and toes orpiment-orange, outer lake-red; plumage black, glossed with blue and green above; outer secondary quills, tips of their coverts, and a spot below the eye, white; tail of fourteen feathers. Female with the bill dusky, its basal prominence less elevated; the feet coloured as in the male; the plumage sooty brown, the breast and abdomen paler; outer secondaries and tips of their coverts white; two whitish spots on each side of the head. Young like the female.

Male, 21, 37, $11\frac{1}{2}$, $1\frac{1}{12}$, $1\frac{1}{12}$, $2\frac{1}{12}$, $\frac{4}{12}$. Female, 21, 36.

The Velvet Scoters make their appearance on our coasts in the end of autumn, and depart about the middle of April. They frequent the estuaries and bays, and procure their food by diving. They fly low, with considerable speed, swim well, remain long under water, are usually gregarious, and often assemble in very large flocks. It is on the eastern coasts of Scotland that they are most abundant. In summer they retire to the arctic regions to breed. The species is common to both continents.

Velvet Duck. Black Duck. White-winged Black Duck. Double Scoter. Black Diver.

Anas fusca, Linn. Syst. Nat. i. 196.—Anas fusca, Lath. Ind. Ornith. ii. 848.—Anas fusca, Temm. Man. d'Ornith. ii. 854.—Oidemia fusca, Velvet Scoter, MacGillivray, Brit. Birds, v.

256. Oidemia nigra. Black Scoter.

Male with a hemispherical protuberance at the base above, the rounded lateral protuberances partially feathered; both mandibles black, but the upper with part of the basal knob and the space including the nostrils yellow; the feet dusky; the plumage entirely black; tail of sixteen feathers. Female with the bill dusky, its basal prominence less elevated; the plumage blackish-brown above, greyish-brown beneath. Young like the female.

Male, 19, 35. Female, 18, 34.

This species is not uncommon on some parts of our coasts during winter. It is easily distinguished from the last by having no white on the wing. Its trachea differs in being destitute of the roundish flattened dilatation of the other species.

Black Duck.

Anas nigra, Linn. Syst. Nat. i. 196.—Anas nigra, Lath. Ind. Ornith. ii. 848.—Anas nigra, Temm. Man. d'Ornith. ii. 856.—Oidemia nigra, Black Scoter, MacGillivray, Brit. Birds, v.

257. Oidemia perspicillata. Surf Scoter.

Male with the bill having a gentle sloping protuberance in front, the very large lateral prominences bare, the upper mandible with a nearly square black patch on each side at the base, margined with orange, unless anteriorly, where there is a bluish-white patch; the prominent part over the nostrils reddish-orange, paler at the margins, the sides toward the end red, the unguis greyish-yellow; the lower mandible flesh-coloured, with the unguis darker; the tarsi and toes orange-red, the webs dusky; the plumage deep black, glossed with blue; a patch of white on the top of the head, and another on the hind-neck; tail of fourteen feathers. Female with the bill greenish-black, its basal prominences less elevated; the feet yellowish-orange; the plumage brownish-black, darker on the top of the head, and upper parts of the body.

Male, 20, 33, $9\frac{3}{4}$, $1\frac{1}{2}$, $1\frac{7}{12}$, 2, $\frac{4}{12}$. Female, 19, 31.

Abundant in winter on the eastern coasts of America. Sometimes occurs also on the coasts of Europe. Mr Gould states that he has received a female killed in the Frith of Forth.

Black Duck. Surf Duck. Great-billed Scoter.

Anas perspicillata, Linn. Syst. Nat. i. 201.—Anas perspicillata, Lath. Ind. Ornith. ii. 847.—Oidemia perspicillata, Surf Scoter, MacGillivray, Brit. Birds, v.

GENUS CXXXI. CLANGULA. GARROT.

The species of this genus are inferior in size to the Eiders and Scoters, to which they seem to be nearly allied. The body is full, ovate, compact, and depressed; the neck rather short, and thick; the head large, oblong, compressed, and rounded above. Bill shorter than the head, much higher than broad at the base, gradually depressed, and with its breadth moderately diminished to the end, which is rounded; upper mandible with the lateral sinuses broad and rounded, the basal angles short or moderate, the ridge flattened and broad at the base, the unguis large and convex, the edges thin, with little elevated lamellæ, which do not project. Mouth of moderate width; tongue fleshy, papillate at the base, deeply grooved above, with the edges posteriorly serrate, anteriorly lamelloso-fibrillate, the tip thin, and semicircular; œsophagus of moderate width; stomach large, transversely elliptical, little compressed, with very strong muscles, and dense epithelium; intestine rather long and wide; cœca long and rather narrow. Trachea generally much enlarged about the middle, with an extremely large bony and membranous tympanum. Nostrils oblong, medial. Eyes small. Aperture of ear small. Legs very short, and placed rather far behind; tarsus compressed, with small anterior scutella; hind toe very slender, with a lobiform membrane; anterior toes nearly double the length of the tarsus; interdigital membranes full; claws small, slender, compressed, rather blunt. Plumage dense, soft, blended; wings short, narrow, convex; the second quill longest, the first scarcely shorter; tail short, graduated, of sixteen stiffish, rounded feathers.

The Garrots inhabit the colder regions, retiring southward

in autumn. They feed chiefly on mollusca, for which they dive, and in most respects resemble the Scoters in their habits. To this genus may perhaps be referred the Western Duck, or Steller's Duck, which differs, however, in having the scapulars and inner secondaries recurvate, like those of the Eiders and Ice-Ducks, to which it also seems closely allied.

258. Clangula Stelleri. Steller's Garrot.

Male about eighteen inches long, with the bill black; the head, part of the upper neck, a band on the lower neck in front, the scapulars and lower wing-coverts, white; the throat, a broad band on the neck, the upper parts, abdomen, lower tail-coverts, and quills black; inner secondaries recurved, black on the inner, white on the outer web; lower neck and breast light yellowish-red. Female variegated with dusky and light red.

Male, 18.

A single individual of this species, in the Norwich Museum, was shot in February 1830, near Yarmouth.

Anas dispar, Gmel. Syst. Nat. i. 535.—Anas dispar, Lath. Ind. Ornith. ii. 866.—Anas dispar, Temm. Man. d'Ornith. iv. 547.—Stelleria dispar, Pied Stelleria, MacGillivray, Brit. Birds, v.

259. Clangula chrysophthalma. Golden-Eyed Garrot.

Male about nineteen inches long, with the bill black, an inch and a third in length, with the frontal sinus acute; the head and upper neck glossy deep green, with purple gloss; a large ovate white spot on each side between the cheek and the bill, below the level of the eye; the lower neck all round, with the breast, sides, and abdomen white, the elongated feathers of the latter edged with black; upper parts black; the outer scapulars white, some of them edged with black; on the wing a large, undivided, transverse white space, including many of the smaller coverts, some of the secondary coverts, and eight secondary quills; feet orange, webs dusky. Female much smaller, with the bill brown, toward the end yellowish; the head and upper neck dull reddish-brown, the lower neck grey; the upper parts grey, darker behind, the lower white, but with the sides and part of the abdomen brownish-grey, seven of the secondary quills and their coverts white; feet yellowish-brown. Young similar to the female, but with the bill and feet darker, as are the tints of the plu-

mage, the white on the wing traversed by a band of dusky, the tips of the white secondary coverts being of that colour.

Male, 19, 32, 9, $1\frac{5}{12}$, $1\frac{5}{12}$, $2\frac{4}{12}$, $\frac{5}{12}$. Female, 16, 28.

This species makes its appearance in October, disperses over the country, resorting to lakes, pools, rivers, and estuaries, and departs in April. It feeds on larvæ, insects, and mollusca, sometimes small fishes and crustacea. Although its flesh is dark coloured, and not well flavoured, it is often seen in the markets. The young and females are greatly more numerous, in proportion to the males, in the southern parts of Britain, and in the northern, flocks are sometimes seen composed entirely of males. In the arctic regions, where it breeds, the nest is said to be formed of grass and herbage, and placed on the ground, or sometimes in the crevice of a rock, or the hole of a tree. The female plucks the down from her breast to cover the eggs, which are numerous, elliptical, smooth, and of a greenish tint.

Golden-Eyed Duck. Gowdy Duck. Pied Wigeon. Whistler.

Anas Clangula and Glaucion, Linn. Syst. Nat. i. 201.—Anas Clangula and Glaucion, Lath. Ind. Ornith. ii. 867.—Anas Clangula, Temm. Man. d'Ornith. ii. 870.—Clangula chrysophthalma, Golden-Eyed Garrot, MacGillivray, Brit. Birds, v.

260. Clangula histrionica. Harlequin Garrot.

Male about seventeen inches long, with the bill yellowish-brown, the feet greyish-blue, the webs dusky; the head, upper neck, and upper parts of the body, dusky greyish-blue; a triangular white patch before the eye, a round spot behind the ear, a longitudinal mark on the neck, a narrow collar about its middle, a band across its lower fore part, some of the scapulars, the tips of the secondaries, and a spot on the side of the rump, white; a band of white and light red over the eye to the nape; the space between the white bands on the neck and the fore part of the breast, light greyish-blue, the hind part tinged with brown, the sides light red, the feathers under and above the tail bluish-black; all the white markings on the head and neck edged with black. Female about fifteen inches long, with the bill and feet dull greyish-blue, the general colour of the plumage greyish-brown, lighter beneath; the fore part of the head brownish-white, and a roundish-white spot behind the ear. Young similar to the

female, having the upper parts dull brown, the lower brownish-white, transversely undulated with light brown.

Male, 17, 26, $7\frac{3}{4}$, $1\frac{2}{12}$, $1\frac{10}{12}$, $1\frac{11}{12}$, $\frac{4}{12}$. Female, 15, 24.

Of this species, which is common in many parts of North America, and of Eastern Europe and Northern Asia, a few individuals have been obtained in Britain. Its habits are similar to those of the Golden-Eyed Garrot.

Harlequin Duck.

Anas histrionica and minuta, Linn. Syst. Nat. i. 204.—Anas histrionica, Lath. Ind. Ornith. ii. 849.—Anas histrionica, Temm. Man. d'Ornith. ii. 878.—Clangula histrionica, Harlequin Garrot, MacGillivray, Brit. Birds, v.

GENUS CXXXII. CRYMONESSA. ICE-DUCK.

Only one species of this genus is known to me. It differs from Clangula chiefly in having the bill shorter, and the tail longer. The body is full and depressed; the neck rather short; the head moderate, oblong, compressed, rounded above. Bill much shorter than the head, of the same height and breadth at the base, broad, toward the end narrowed; upper mandible with the frontal angles obsolete, the dorsal line sloping, the ridge broad at the base, the unguis large, roundish, convex, decurved, the laminæ projecting considerably beyond the margin; lower mandible with the intercrural space long and narrow, the outer laminæ prominent, the unguis broadly elliptical, little convex. Tongue fleshy, thick, medially grooved, papillate at the base, laterally ciliated, with the tip thin and rounded. Œsophagus rather wide; stomach roundish, very muscular, with rugous epithelium, having the grinding surfaces roundish; intestine of moderate length and width; cœca rather long; rectum very short. Trachea gradually narrowed, at the lower part expanded, having six rings extremely narrow before, with a transversely oblong tympanum, membranous in front. Nostrils large, oblong, subbasal. Eyes rather small. Legs very short, placed far behind; tarsus compressed, with anterior small scutella; hind toe very small, with a lobiform membrane; outer toes equal, and about double the length of the tarsus; membranes full; claws small, slender, little arched. Plumage firm, blended; the feathers oblong and

moderate; scapulars and middle tail-feathers much elongated, and tapering in the male; wings short, convex, acute; the first and second quills about equal; tail small, of fourteen feathers.

This genus has been named *Harelda*, apparently a misprint of *Havelda*, which is said to be the Icelandic appellation of the bird; but as I have objected to the use of barbarous generic names, I have thought that a name compounded of κρυμος, ice, and νησσα, duck, might be as appropriate as any other.

261. CRYMONESSA GLACIALIS. LONG-TAILED ICE-DUCK.

Male with the two middle tail-feathers extremely narrow and elongated, and somewhat recurvate; female with the tail very short and rounded. Male in winter with the bill black in its basal half, red toward the end, with the unguis black; the feet dull orange-red; the head and neck white, the cheeks grey; an oblong black and brown patch on each side of the neck; the fore part of the breast, the back, wing-coverts, and elongated tail-feathers blackish-brown; the quills dark brown; the scapulars and lower parts white; the tail-feathers chiefly white. Female with the bill deep bluish-grey, the feet reddish-brown; the upper part of the head and nape chocolate-brown; the sides of the head and neck, and middle part of the hind-neck white; the throat, an oblong patch on the sides of the neck, and the lower neck all round, greyish-brown; the lower parts white, the upper deep chocolate-brown, the tail brownish-grey. Male in summer with the upper part of the head and the nape brownish-black, the sides of the head greyish-white, the neck all round, and the fore part of the breast, dark chocolate-brown; the back and wing-coverts brownish-black, the scapulars margined with reddish-brown.

Male, 25, 30, $9\frac{1}{2}$, $1\frac{2}{12}$, $1\frac{3}{12}$, $1\frac{11}{12}$, $\frac{4}{12}$. Female, 16, 26.

This species inhabits the arctic regions of both continents, in summer extending to the margins of the polar ice, and in winter moving southward along the coasts, but not advancing far into the temperate regions. It is very common in the north of Scotland, less so in the south, and rare on the coasts of England. Its food consists of shell-fish and crustacea, for which it dives. From its loud clear cry, it is named in the northern islands *Calloo*. The structure of its trachea indicates an affinity to the Mergansers.

Long-tailed Duck. Sharp-tailed Duck. Calloo.

Anas glacialis and hyemalis, Linn. Syst. Nat. i. 202.—Anas glacialis, Lath. Ind. Ornith. ii. 864.—Anas glacialis, Temm. Man. d'Ornith. ii. 864.—Crymonessa glacialis, Long-tailed Ice-Duck, MacGillivray, Brit. Birds, v.

GENUS CXXXIII. FULIGULA. SCAUP-DUCK.

The Scaup-Ducks have the body very large, short, full, and depressed; the neck moderate or rather short; the head rather large, oblong, compressed, and rounded above. Bill nearly as long as the head, about the same height and breadth at the base, becoming depressed, and enlarging in breadth to the end, which is very broad and semicircular; upper mandible with the basal lateral sinuses very short and wide, the upper sinus short, the frontal angles obtuse and little extended, the dorsal line gently declinate for half its length, then nearly direct to the unguis, which is small, obovato-oblong, flattened, and decurved, the ridge broad, and flat at the base, gradually narrowed, the sides gradually more spreading and convex toward the end, the edges soft, marginate, concealing the ends of the numerous little elevated lamellæ; lower mandible with the intercrural space long and rather wide, the outer lamellæ small, the unguis obovate, rather small, and nearly flat. Mouth of moderate width; anterior palate broadly concave, with a median prominent line, and numerous, slender, little elevated lamellæ; tongue fleshy, with a deep median groove, papillate at the base, lamelloso-filamentous on the margins, with the tip thin and somewhat semicircular; œsophagus rather wide; stomach a very muscular gizzard, of a transversely elliptical form, with longitudinally rugous epithelium, and somewhat concave circular grinding plates; intestine very long and wide; cœca long, of moderate width; rectum very short. Trachea with a very large bony and membranous tympanum, of an irregular form, with a semicircular carina on one side. Nostrils small. Eyes small. Ears very small. Legs very short, placed rather far behind; tarsus compressed, with small anterior scutella; hind toe very slender, with a broad membrane; outer toes about equal, and double the length of the tarsus; interdigital membranes emarginate; claws

small, slender, little arched, rather pointed. Plumage dense, firm, glossy; on the head and neck very soft, and silky or velvety; wings short, convex, narrow, pointed, of twenty-six quills; the first longest; tail very small, much rounded, or cuneate, of fourteen stiffish tapering feathers.

Black, white, and grey are the prevailing colours of the plumage. The birds of this genus feed on vegetable substances, shell-fish, crustacea, insects, and larvæ. In summer they resort to the arctic marshes and lakes, and in winter reside on fresh or on salt water. They procure their food chiefly by diving.

262. Fuligula Marila. Broad-billed Scaup-Duck.

Male twenty inches long, with the bill broad, enlarged toward the end, two inches long, an inch and a twelfth in breadth, dull light greyish-blue, with the unguis blackish; feathers of the head short; head and upper part of the neck greenish-black, the rest of the neck, fore part of the back and breast, and hind part of the back, black; the rest of the back and the wing-coverts greyish-white, finely undulated with dusky; outer secondaries partly white; breast and sides white; hind part of abdomen and lower tail-coverts dusky; tail brownish-grey, of fourteen feathers. Female with the head, neck, and fore part of the back and breast, brown; a broad band of white on the forehead; upper parts blackish-brown, in part undulated with whitish; middle of the breast white, sides and hind parts dusky brown. Young nearly similar to the female.

Male, 20, 32, 9, 2, $1\frac{5}{12}$, $2\frac{5}{12}$, $\frac{5}{12}$. Female, 18, 29.

The Scaup-Duck arrives on our coasts in the end of October, and continues to increase until the middle of winter. In the estuaries and along the flat shores, it is met with plentifully, often in very large flocks; but it also sometimes betakes itself to fresh water. Its food consists chiefly of mollusca, which it obtains by diving. Its flight is moderately quick, generally low. In the end of March and beginning of April it disappears from our coasts. The species occurs equally in North America.

Scaup Duck. Spoon-bill Duck.

Anas Marila, Linn. Syst. Nat. i. 196.—Anas Marila, Lath. Ind. Ornith. ii. 853.—Anas Marila, Temm. Man. d'Ornith. ii. 865.—Fuligula Marila, Broad-billed Scaup-Duck, MacGillivray, Brit. Birds, v.

263. Fuligula cristata. Tufted Scaup-Duck.

Male seventeen inches long, with the bill broad, enlarged toward the end, an inch and eight-twelfths long, eleven-twelfths and a half in breadth, leaden-grey, with a terminal black band, including the unguis; feathers of the head elongated into a large decurved crest; the head and upper part of the neck purplish-black; the upper parts black, obscurely and minutely dotted with white; a white band from the fourth primary to the tenth secondary, the tips black, the breast and sides white; hind part of abdomen and lower tail-coverts dusky; tail greyish-black, of fourteen feathers; iris bright yellow. Female much smaller, with the crest shorter; the head and upper neck brownish-black; the upper parts blackish-brown, more faintly dotted with whitish; the breast white; the sides and lower fore-neck dusky brown, the feathers edged with whitish; hind part of abdomen and lower tail-coverts dusky, variegated with whitish; iris pale yellow. Young similar to the female, but with the bill and feet darker, the plumage more brown; a white patch on each side before the eye, and a triangular whitish spot on the chin; the iris yellowish-white.

Male, 17, 30, $8\frac{1}{4}$, $1\frac{8}{12}$, $1\frac{2}{12}$, $2\frac{1}{12}$, $\frac{5}{12}$. Female, 15, 28.

The Tufted Scaup-Duck arrives in October, and departs in April. It is generally dispersed, frequenting lakes, pools, marshes, and the still parts of rivers, where it feeds chiefly on insects, testaceous mollusca, and worms, for which it dives. It is also sometimes met with in estuaries and on the open sea. It is more common in the southern than in the northern parts of Britain.

Tufted Duck. Black Duck. Black Wigeon.

Anas Fuligula, Linn. Syst. Nat. i. 543.—Anas Fuligula, Lath. Ind. Ornith. ii. 869.—Anas Fuligula, Temm. Man. d'Ornith. ii. 873.—Fuligula cristata, Tufted Scaup-Duck, MacGillivray, Brit. Birds, v.

GENUS CXXXIV. AYTHYA. POCHARD.

The Pochards differ from the Scaup-Ducks in no other essential respect than in having the bill narrower and more elongated, and the membrane of the hind toe of less breadth. The body is very large, full, and depressed; the neck mode-

rate; the head rather large, oblong, compressed, and rounded above. Bill as long as the head, higher than broad at the base, becoming depressed toward the end, of nearly equal breadth throughout; upper mandible with the basal lateral sinuses short and wide, the upper sinus rather narrow, the frontal angles acute, the dorsal line declinate for half its length, then direct to the unguis, which is small, oblong, flattened, and decurved, the ridge broad and flat at the base, gradually narrowed, the sides gradually more spreading and convex, the edges soft, marginate, concealing the ends of the numerous, little elevated lamellæ; lower mandible with the intercrural space very long, rather narrow, the outer lamellæ small, the unguis obovate, rather small, and little convex. Mouth rather narrow; anterior palate broadly concave, with a median prominent line, and slender, little elevated, lateral lamellæ; tongue fleshy, with a deep median groove, papillate at the base, lamelloso-filamentous on the margins, with the tip thin, and somewhat semicircular; œsophagus rather wide; stomach a very muscular gizzard, of a transversely elliptical form, with longitudinally rugous epithelium, and thick, circular grinding plates; intestine very long and wide; cœca of moderate length. Nostrils small. Eyes small. Ears very small. Legs very short, placed rather far behind; tarsus compressed, with small anterior scutella; hind toe very slender, with a narrow lobiform membrane; outer toes about equal, and double the length of the tarsus; interdigital membranes emarginate; claws small, slender, little arched, rather pointed. Plumage dense, firm, glossy; feathers of the head and neck soft, blended, silky or velvety; wings short, convex, narrow, pointed, of twenty-six quills, the first longest; tail very small, much rounded, of fourteen stiffish, tapering feathers.

Brown, grey, white, and brownish-red, are the prevailing colours of the plumage. This genus is one of those which approach nearest to the Anatinæ, and the species are by no means exclusively marine. When fed on vegetable substances they afford good eating, the flesh of one species, Aythya valisneriana, being in America celebrated above that of every other duck. Three species occur in Britain.

264. Aythya rufina. Red-crested Pochard.

Male twenty-one inches long, with the bill two inches and two-twelfths long, rather narrow, bright red, with the unguis white; feathers of the upper part of the head and nape elongated; head and upper neck brownish-red; lower part of neck, breast, and abdomen, black; back, wings, and tail, light brown; sides of the body, outer secondary quills, anterior edge of the wing, and an oblong spot on each shoulder, white. Female with the bill bright red; the upper part of the head and nape deep brown; the throat, cheeks, and sides of the neck greyish-white; the upper parts brown; the lower fore-neck and sides mottled with brown; the lower parts brownish-white.

Male, 21, . . , $2\frac{2}{12}$, 10, $1\frac{5}{12}$.

This species is said to inhabit more especially the eastern parts of the north of Europe, migrating southward in autumn. A few individuals have been shot in England.

Anas rufina, Gmel. Syst. Nat. i. 541.—Anas rufina, Lath. Ind. Ornith. ii. 870.—Anas rufina, Temm. Man. d'Ornith. ii. 864.—Aythya rufina, Red-crested Pochard, MacGillivray, Brit. Birds, v.

265. Aythya Ferina. Red-headed Pochard.

Male eighteen inches long, with the bill rather narrow, two inches in length, of the nearly uniform breadth of eight-twelfths, black at the base and tip, dull light blue elsewhere; feathers of the head short; head and upper half of the neck brownish-red; lower part of neck and hind part of back brownish-black; back greyish-white, minutely undulated with dark grey; secondary quills ash-grey; lower parts greyish-white, minutely undulated; hind part of abdomen and lower tail-coverts dusky; tail greyish-brown, of fourteen feathers. Female with less blue on the bill, the head and hind-neck reddish-brown; the fore part of the cheeks paler; the lower part of the neck all round and the back greyish-brown, the latter obscurely undulated with white; the rest as in the male, but duller, and the sides dusky. Young like the female.

Male, 18, $25\frac{1}{2}$, $8\frac{1}{4}$, 2, $1\frac{5}{12}$, $2\frac{1}{12}$, $\frac{5}{12}$. Female, 17, 24.

The Red-headed Pochards arrive on our coasts in the end of October, some betaking themselves to marshes and pools, others remaining in the bays and estuaries. They feed chiefly

on the rhizomata of grasses, and other vegetable substances, zostera marina, worms, and mollusca. The flesh of this species is moderately good, but inferior to that of the true Ducks and Teals. It departs in March and April, betaking itself to the Arctic Regions to breed. It is common to America and Europe.

Poker. Red-headed Poker. Great-headed Wigeon. Dunker.

Anas Ferina, Linn. Syst. Nat. i. 203.—Anas Ferina, Lath. Ind. Ornith. ii. 862.—Anas Ferina, Temm. Man. d'Ornith. ii. 866.—Aythya Ferina, Red-headed Pochard, MacGillivray, Brit. Birds, v.

266. Aythya Nyroca. White-eyed Pochard.

Male sixteen inches long, with the bill dusky-blue, the unguis black; the head, neck, fore part of breast and sides, chestnut-red; the neck with an obscure brown band; a white spot on the chin; the rest of the lower parts white; the upper parts blackish-brown, glossed with purple; the secondary quills white, with a subterminal black band; the iris white. Female with the head, neck, fore part of breast and sides, reddish-brown; the upper parts dusky, the feathers edged with paler; the lower parts white, the wings as in the male.

Male, 16. Female, 15.

Of rare occurrence in England in winter; but not hitherto observed in Scotland.

Anas Nyroca, Gmel. Syst. Nat. i. 542.—Anas Nyroca, Lath. Ind. Ornith. ii. 869.—Anas leucophthalmos, Temm. Man. d'Ornith. ii. 876.—Aythya Nyroca, White-eyed Pochard, MacGillivray, Brit. Birds, v.

The species of this genus appear to be in some respects more nearly allied to the Anatinæ than those of the other genera, and at the same time to approximate closely to the Merganserinæ. The Red-crested Pochard, in particular, seems to differ little from the Mergansers.

FAMILY XLIV. MERGANSERINÆ. MERGANSERINE BIRDS, OR MERGANSERS.

Intimately allied in many respects to the Anatinæ and Fuligulinæ, and in others to the Divers and Cormorants,

the Mergansers, although few in number, seem yet to form a very distinct family, of which the following are among the most important characters:—The body is large, elongated, elliptical, and depressed; the neck long and slender; the head oblong, compressed, anteriorly narrowed. Bill rather long, straight, or a little rearcuate, slender, tapering, and toward the end becoming nearly cylindrical; the edges of both mandibles furnished with lamellæ much narrower than in the Ducks, and in the larger species conical, acuminate, and directed backward; the unguis oblong, of the same breadth as the mandibles, and the upper abruptly decurved. Mouth rather narrow, but dilatable; tongue fleshy, with lateral bristles, and lacerated tip; œsophagus very wide; stomach rather small, roundish, very muscular, with thick, rugous epithelium; intestine long, rather wide, with moderately large cœca, and globular cloaca. Trachea variously enlarged, and always having an enormous dilatation at its lower extremity, partly bony and partly membranous; bronchi wide. Eyes rather small. Nostrils oblong, submedial. Ear-aperture very small. Legs short, placed far behind; tarsi very short, much compressed; toes four; the first very small, elevated, arcuate, with a lobiform membrane; anterior toes long, with full membranes, the inner with a bilobate web; claws small, little arched, compressed. Plumage moderately full, firm, glossy; the feathers curved, with a small down-plumule; head and nape crested; wings short, of moderate breadth, convex, pointed, the first quill longest; tail short, much rounded, of from fourteen to eighteen, stiffish, tapering feathers.

The males, which are larger than the females, assume in summer somewhat of their appearance. As in the Anatinæ, there is a speculum on the wing. Their food consists chiefly of fish, for which they dive; their flight is quick, and direct; but they walk with difficulty. They pass the summer in the colder regions, form a bulky nest,

which they line with down, and lay numerous elliptical, cream-coloured, or white eggs. The young presently betake themselves to the water.

GENUS CXXXV. MERGANSER. GOOSANDER.

Body large, elongated, elliptical, depressed; neck long; head moderate, oblong, anteriorly narrowed. Bill about the length of the head, nearly straight or slightly arcuate, rather stout, of greater height than breadth at the base, tapering to the middle, beyond which it is slender and cylindrical; upper mandible with the lateral sinuses short and rounded, the upper angle rather acute, the ridge broad at the base, gradually narrowed, the nasal sinus oblong, the unguis oblongo-elliptical, convex, abruptly decurved, the edges marginate, serrate, with dentiform, compressed, tapering lamellæ. Palate flat, anteriorly with a medial prominent line, and on each side a series of slight oblique lamellæ; tongue slender, papillate, or bristly above and on the edges, with the tip narrow and lacerated; œsophagus very wide; stomach roundish, very muscular, with dense rugous epithelium; intestine long; cœca moderate, narrow at the base, cylindrical, obtuse; rectum with a globular dilatation. Trachea in the male with one or two dilatations, and an enormously large bony and membranous tympanum. Nostrils oblong, pervious. Eyes rather small. Aperture of ear extremely small. Legs very short, placed far behind; tarsus stout, compressed, anteriorly with small scutella; hind toe very small, anterior long, the outer little shorter than the third; interdigital membranes full; claws small, slightly arcuate, rather acute. Plumage moderately full, firm; feathers of the occiput and nape elongated and slender; scapulars and inner secondaries elongated; wings short, acuminate, of twenty-six quills; primaries stiffish, tapering, the first longest; tail small, much rounded, of eighteen stiffish feathers.

267. Mergus Castor. Buff-breasted Goosander.

Male twenty-six inches long, with a broad longitudinal, rather inconspicuous, crest of oblong feathers; the bill and feet red; the head and upper neck greenish-black; the back

black before, grey behind; the lower fore-neck, breast, sides, and abdomen, pinkish buff-colour; sides of the rump undulated with grey and white; outer scapulars, wing-coverts, and secondary quills, white. Female with the crest longer and more slender; the bill and feet of a duller tint; the head and upper neck light reddish-brown, the throat whitish, the lower neck pale grey, the feathers edged with white, the breast and abdomen white, the sides grey; the upper parts deep ash-grey, as are the smaller wing-coverts; some of the secondary quills, and their coverts, white, unless at the base. Young similar to the female.

Male, 26, 36, $11\frac{1}{2}$, $2\frac{8}{12}$, $1\frac{10}{12}$, $2\frac{1}{2}$, $\frac{5}{12}$. Female, 24, 33.

Widely dispersed in summer over the northern regions of both continents. Some individuals remain to breed in the remotest parts of Scotland and its islands. In winter it is met with sparingly in all parts of Scotland, as well as in many districts in England. At all seasons it prefers lakes and rivers to estuaries, but may be seen even in summer fishing in the sea. It is shy, vigilant, and active, flies with rapidity, and dives with great dexterity. The nest is composed of grass, sedge, and fibrous roots, lined with down. The eggs, seven or eight, are two inches and seven-eighths long, two inches broad, nearly equally rounded at both ends, smooth, and of a uniform dull cream-colour. The flesh is coarse and unsavoury.

Goosander. Greater Goosander. Saw-bill. Jack-saw. Dun Diver.

Mergus Merganser and Castor, Linn. Syst. Nat. i. 209.—Mergus Merganser and Castor, Lath. Ind. Ornith. ii. 823.—Mergus Merganser, Temm. Man. d'Ornith. ii. 881.—Merganser Castor, Buff-breasted Merganser, MacGillivray, Brit. Birds, v.

268. Mergus Serrator. Bay-necked Goosander.

Male twenty-four inches long, with a longitudinal crest of linear feathers, of which two separate tufts are longer than the rest; the bill and feet red; the head and upper neck greenish-black; the back black before, grey with dusky lines behind; the middle fore-neck light red, streaked with dusky, breast and abdomen pure white, sides and hind part of back undulated with dark grey lines; a white patch on the wing, including the smaller wing-coverts, with two transverse black bands. Female with the crest smaller, the bill and feet of a duller tint; the head and upper neck light reddish-brown; the throat whitish, the lower neck brownish-grey,

the feathers edged with white; the breast and abdomen white, the sides grey; the upper parts brownish-grey, the feathers edged with paler; the white patch on the wing as in the male, but not extending to the smaller wing-coverts, which are grey, and thus having only one dark band. Young similar to the female, but more brown above.

Male, 24¼, 30, 9½, 2½, 1$\frac{10}{12}$, 2$\frac{5}{12}$, $\frac{5}{12}$. Female, 22½, 28½.

The summer residence of this species is in the northern parts of both continents, from the colder temperate regions to the borders of the polar ice. In winter it advances southward, and is common in Scotland, betaking itself chiefly to streams and lakes, but also to estuaries and the open sea. Many breed in the Hebrides, Orkney, and Shetland Islands. The eggs, from five to ten, are oval, cream-coloured, or very pale buff, two inches and a half in length, an inch and three-fourths in breadth. The flesh is not in request, being tough and oily. Small fishes of various kinds are the ordinary food of this species. The trachea of the male has a single oblong dilatation, besides the enormous tympanum, while that of the last species has two.

Red-breasted Merganser. Harle. Gool-Duck.

Mergus serrator, Linn. Syst. Nat. i. 208.—Mergus serrator, Lath. Ind. Ornith. ii. 829.—Mergus serrator, Temm. Man. d'Ornith. ii. 884.—Mergus serrator, Bay-necked Merganser, MacGillivray, Brit. Birds, v.

269. Merganser cucullatus. Hooded Goosander.

Male with the bill nearly as long as the head, an inch and three-fourths in length, three-twelfths in breadth behind the unguis; a large, longitudinal, compressed, semicircular black crest, with an angular patch of white behind; head, upper neck, hind part of lower, and the greater part of the back, black; lower fore-neck and breast white; two transverse curved black lines on each side before the wing; sides yellowish-brown, finely undulated with black; primary quills and coverts brownish-black; outer secondary quills and coverts greenish-black, white toward the end; inner, white with black margins. Female with the crest smaller and decurved; the upper part of the head reddish-brown, cheeks and upper neck greyish-brown; throat greyish-white; lower part of neck grey; back blackish-brown; wings without white on the inner secondaries; lower parts greyish-white, sides dusky brown. Young similar to the female, more tinged with brown above, and faintly barred with grey beneath.

Male, 19, 28, $7\frac{1}{2}$, $1\frac{1}{2}\frac{0}{2}$, $1\frac{2}{1}\frac{2}{2}$, $1\frac{1}{1}\frac{0}{2}$, $\frac{4}{1}\frac{4}{2}$. Female, 17, 25.

The proper country of this beautiful bird is North America, where it breeds in the Arctic regions, and retires southward early in September, passing the winter in the bays and estuaries, as well as on the inland waters. A few instances of its occurrence in Europe have been recorded. Mr Selby added it to the British Fauna, on the authority of a specimen killed at Yarmouth in the winter of 1829.

Hooded Merganser.

Mergus cucullatus, Linn. Syst. Nat. i. 207.—Mergus cucullatus, Lath. Ind. Ornith. ii. 830.—Mergus cucullatus, Temm. Man. d'Ornith. iv. 557.—Merganser cucullatus, Hooded Merganser, MacGillivray, Brit. Birds, v.

GENUS CXXXVI. MERGUS. SMEW.

The Smews differ little from the Mergansers, unless in having only sixteen feathers to the tail, and especially in presenting a bill which approaches considerably in form to that of the Duck species. It is shorter than the head, straight, rather stout, tapering, at the end nearly cylindrical; the unguis of the upper mandible oblongo-elliptical, and abruptly decurved; that of the lower, oblongo-trigonal and convex; the margins of both mandibles serrate with the dentiform tapering, slightly reversed ends of the oblique short lamellæ. Mouth narrow, but dilatable; tongue rather slender, fleshy, bristly above and on the edges, with the tip narrow, but rounded; œsophagus very wide; stomach roundish, very muscular; intestine long, with rather large cœca.

270. Mergus Albellus. Pied Smew.

Male with the bill shorter than the head, straight, tapering, nearly cylindrical at the end; a decurved longitudinal white crest; on the fore part of the cheek a patch of greenish-black, and along the occiput a band of the same; the neck, scapulars, smaller wing-coverts, and lower parts, white; the back black, shaded into grey behind; a transverse black line on each side, before the wing; primary quills and coverts brownish-black; secondary quills and coverts black, tipped with white; scapulars edged with black; sides partly grey. Female with the upper part of the head, hind part of the cheeks, and nape, brownish-red; a blackish-brown patch on the fore part of the cheek; throat white; lower part of neck all round ash-grey, darker above; back blackish-grey, its hind part and the sca-

pulars ash-grey; wings as in the male, lower parts white, with the sides partly grey. Young nearly similar to the female.

Male, $15\frac{3}{4}$, 24, $7\frac{4}{12}$, $1\frac{2}{12}$, $1\frac{2}{12}$, $1\frac{11}{12}$, $\frac{4}{12}$. Female, 14, 23.

This species, which is a native of the Arctic regions of both Continents, and retires southward in the end of October, visits the southern parts of England in great numbers, but is rarely met with in Scotland.

Mergus Albellus, Linn. Syst. Nat. i. 209.—Mergus Albellus, Lath. Ind. Ornith. ii. 831.—Mergus Albellus, Temm. Man. d'Ornith. ii. 837. Mergus Albellus, Pied Smew, Mac-Gillivray, Brit. Birds, v.

Having examined the Lamellirostral families of the web-footed series of birds, analogous in many respects to the families of the Scrapers among the free-toed species, we have seen that, in the Mergansers, an evident transition is made to the Divers, which not only swim, but procure their food under the surface of the waters. These birds, of which the species that occur on our coasts are sufficiently numerous to afford a correct idea of the structure and habits distinctive of the order to which they belong, are so large, so conspicuous, so well characterized, and so remarkable in their habits, that one can easily render himself in some degree acquainted with them.

ORDER XVIII. URINATRICES. DIVERS.

The birds to which I give the general name of Divers, simply because they are universally distinguished by the faculty implied by that term, and because all of them procure their prey by pursuing it in the liquid element, agree in presenting the following characters. They have the body large, of an elliptical form, more or less depressed; the neck generally strong; the head oblong, anteriorly compressed. Bill of moderate length, strong, tapering, compressed, pointed, opening rather widely, and more or less dilatable. Nostrils basal, small, oblong;

eyes rather small; aperture of ear very small. Tongue slender, pointed; œsophagus wide, with moderately thick walls; proventriculus large; stomach rather large, roundish, with the muscular coat rather thick, the tendons roundish, the epithelium thickish and rugous; intestine long and rather wide, with moderate cœca; the rectum with a very large globular dilatation. Legs generally very short, and placed very far behind, so as to cause a nearly erect attitude; tibia bare for a very short space; tarsus short, extremely compressed; toes four, all much compressed, and scutellate; the anterior long, and webed; claws small, and blunt. Plumage close, short, blended on the head and neck, firm and compact above. Wings narrow, pointed; tail extremely short.

The Urinatrices are essentially piscivorous, although several species feed also on insects, reptiles, crustacea, and other small aquatic animals, and some on mollusca. They nestle on the ground or on rocks, but sometimes deposit their eggs on the bare surface, or in holes, without any nest. The young remain in the place where they have been hatched for some time. Their flesh is dark-coloured, disagreeably-flavoured, and unfit for food. The males are larger than the females. All the species are in some degree migratory. They fly with a rapid, direct motion, scarcely ever walk, stand in an inclined, nearly erect posture, swim and dive with the greatest address, using their wings as well as feet for propelling themselves under water. The number of species that occur in Britain is only fourteen; but of several of them the individuals are extremely numerous.

FAMILY XLV. PODICIPINÆ. PODICIPINE BIRDS, OR GREBES AND LOONS.

The Grebes, considered as a family, are characterized more especially by the manner in which the feet are adapted for rapid swimming, the tarsi and toes being extremely compressed. They are birds varying from rather small or moderate to large size, with the body elliptical, much depressed, especially behind, where it often forms, when the legs are extended, a broad, thin edge; the neck very long and slender; the head small, oblong, compressed, gradually tapering forward; the bill rather long, slender, straight, much compressed, tapering, and pointed; the legs very short, placed at the posterior extremity of the body, the tibia, though long, being included within the skin; the tarsus short, and extremely compressed; the toes four, so disposed that with their webs they may fold into a compressed paddle, which in swimming is expanded into wide-spreading lobes. The plumage is very soft, blended, on the lower parts silky; the scapulars very long and decurved; the wings small and pointed, with eleven primaries; the tail, always very small, often a slight tuft or pencil of minute downy feathers, scarcely perceptible. They are essentially diving piscivorous birds, inhabiting chiefly fresh water, but also occasionally betaking themselves to the sea, and especially to estuaries. They float lightly, but can sink on occasion so as to present only the head and neck. Among birds remarkable for the facility with which they swim and dive, they are conspicuous in that respect. They are incapable of walking, and can hardly even alight on their feet. It is remarkable that most of the species have the habit of swallowing feathers. Their nests are bulky, placed among aquatic herbage; the eggs of some are oval, white, and from three to six, of others

oblong, olivaceous, and spotted. The young, covered with down, immediately betake themselves to the water. Besides fishes, these birds feed on reptiles, insects, mollusca, and sometimes seeds. Adults frequently have the head and neck ornamented with crests or ruffs, which are produced in spring, and fall off in autumn. The prevailing colours are dusky and silvery white. Seven species occur in Britain.

GENUS CXXXVII. PODICEPS. GREBE.

The Grebes, properly so called, have the body elongated and depressed; the neck rather long and slender; the head of moderate size, or small, oblong, narrowed before. The bill about the length of the head, or shorter, straight, rather stout, much compressed, tapering, pointed; the upper mandible mobile at the base, as if jointed, with the dorsal line nearly straight, the nasal grooves narrow, and of considerable length, the edges very sharp and a little inclinate, the tip direct, rather acute; the lower mandible with the angle very long and narrow, partly bare, the outline ascending and nearly straight, the edges very sharp, the tip rather acute. The mouth does not open so far back as the eyes, and is rather narrow, but dilatable; the tongue long, slender, fleshy, trigonal, tapering to a slit point; œsophagus wide; stomach large, roundish, with the muscular coat rather thick, but not divided into distinct muscles, the tendons roundish, the epithelium longitudinally rugous; the intestine long and rather wide, with rather long and slender cœca, and a very large globular cloaca. Nostrils basal, linear-oblong. Eyes rather small; a bare space from the eye to the bill. Aperture of ear extremely small. Legs placed at the posterior extremity of the body; tibia enveloped in the general integument, unless at the very end; tarsus short, extremely compressed, its narrow anterior ridge with small scutella, the posterior with two series of small prominent scales, separated by a groove; toes four; the first very small, with two lateral lobes; anterior toes obliquely flattened, the outer longest, all webbed at the base, and toward the end having stiffish lateral expansions marked with oblique parallel lines;

claws small, depressed, the third expanded, and serrulate at the end. Plumage very soft and blended, on the lower parts silky; scapulars very long and decurved; wings small; primaries eleven, small, the outer two longest; tail a slight tuft of minute downy feathers.

The Grebes are extensively distributed, but not numerous as to species, inhabiting chiefly fresh water, but also occurring on the sea, and especially estuaries. They swim and dive with surprising agility; feed on fishes, reptiles, and insects; fly with rapidity; form a bulky nest, and lay numerous oblong white eggs. The young presently after being hatched betake themselves to the water. All the species swallow feathers.

271. Podiceps cristatus. Crested Grebe.

Male about twenty-four inches in length, with the bill two inches long, slender, compressed, carmine-red, the ridge dusky, the tips yellowish-grey; a transverse occipital crest, with two more elongated tufts, and a large ruff on the cheeks and fore neck; the upper parts greyish-black, the lower silvery white, the ruff light red anteriorly, black behind, the sides of the body reddish-brown; most of the secondary quills, the humerals, and the anterior edge of the wing, white. Female smaller, similar to the male, but with the tufts and ruff shorter. Young without crest or ruff, dusky grey above, silvery white beneath.

Male, 23, 34, $7\frac{8}{12}$, $2\frac{1}{12}$, $2\frac{7}{12}$, $2\frac{1}{2}$, $\frac{5}{12}$. Female, 19, 32.

This species, the largest of its genus, is extensively dispersed over the northern parts of both Continents. It breeds in various parts of Britain, forming a large nest, and laying four eggs of an elongated elliptical form, two inches and a quarter in length, only an inch and a half in breadth, greenish-white, and at length generally soiled with mud. It feeds on fishes, frogs, insects, and mollusca. More individuals are seen with us in winter, there being probably accessions from more northern countries. The plumage, being dense and glossy, is sometimes used in place of fur.

Colymbus cristatus, Linn. Syst. Nat. i. 222.—Podiceps cristatus, Lath. Ind. Ornith. ii. 780.—Podiceps cristatus, Temm. Man. d'Ornith. ii. 717.—Podiceps cristatus, Crested Grebe, MacGillivray, Brit. Birds, v.

Greater Crested Grebe, Tippet Grebe, Crested Ducker, Gaunt, Cargoose.

272. PODICEPS RUBRICOLLIS. RED-NECKED GREBE.

Male about eighteen inches long, with the bill an inch and two-thirds, rather stout, compressed, black, with the base yellow, a short transverse occipital crest, with two more elongated tufts, and a slight ruff on the cheeks and fore-neck; the upper parts greyish-black, the lower silvery white, the ruff light grey edged with white, the fore part and sides of the neck rich brownish-red, the sides of the body streaked with dusky; several of the outer secondary quills white. Female smaller, similar to the male, but with the tufts and ruff shorter. Young without crest or ruff, dusky grey above, silvery white beneath; the cheeks greyish-white, the fore-neck brownish-grey.

Male, 18, 30, 7, $1\frac{9}{12}$, $2\frac{1}{12}$, $2\frac{4}{12}$, $1\frac{5}{12}$. Female, 17, 28.

The Red-necked Grebe, which is said to be abundant in the eastern parts of Europe, does not breed in Britain, although, in winter, it appears to be not more rare there than the Crested Grebe. I have procured it, as well as all our other species, from the Frith of Forth, and it has been found in Northumberland, Devonshire, and various other parts of England. It is not uncommon in America. The nest is said to be bulky, the eggs greenish-white, two inches in length, and an inch and a quarter in breadth.

Grey-cheeked Grebe.

Colymbus rubricollis, Gmel. Syst. Nat. i. 592.—Podiceps rubricollis, Lath. Ind. Ornith. ii. 783.—Podiceps rubricollis, Temm. Man. d'Ornith. ii. 720.—Podiceps rubricollis, Red-necked Grebe, MacGillivray, Brit. Birds, v.

273. PODICEPS CORNUTUS. SCLAVONIAN GREBE.

Male about fourteen inches long; with the bill much shorter than the head, nearly an inch in length, rather stout, compressed, black with the tips yellow; two large light-red occipital tufts, and an ample black ruff; the upper parts greyish-black, the lower silvery-white, with the fore part of the neck and the sides of the body red. Female similar, but somewhat smaller. Young with the bill greyish-blue, its base and tip yellow; slight occipital tufts, but no ruff; the upper parts greyish-black, the lower silvery-white, with the sides dusky; the cheeks and throat white, part of the fore-neck light-grey. It is but slightly larger than the next species, from which, however, it is easily distinguished by the different form of its bill.

Male, 14, 24, $5\frac{3}{4}$, $1\frac{1}{12}$, $1\frac{3}{4}$, $1\frac{9}{12}$, $1\frac{4}{12}$. Female, 13, 23.

Abundant in the northern and temperate parts of both continents, it breeds in the colder regions, forming a large

nest, and laying from five to seven yellowish-white eggs, an inch and three-fourths in length, and an inch and a quarter in breadth. In winter it is not extremely rare in Scotland, and occurs equally in England, where it has sometimes been found breeding.

Horned Grebe. Horned Dabchick.

Colymbus cornutus, Gmel. Syst. Nat. i. 591.—Podiceps cornutus, Lath. Ind. Ornith. ii. 782.—Podiceps cornutus, Temm. Man. d'Ornith. ii. 721.—Podiceps cornutus, Sclavonian Grebe, MacGillivray, Brit. Birds, v.

274. Podiceps auritus. Eared Grebe.

Male about thirteen inches long, with the bill much shorter than the head, nearly an inch in length, rather slender, depressed at the base, compressed and a little recurved toward the end, black tinged with blue; two slight dusky occipital tufts, a short black ruff, and a tuft of elongated orange-red feathers from behind each eye; upper parts greyish-black, lower silvery-white; sides light-red streaked with black. Female similar, but somewhat smaller. Young without tufts, and having the upper parts blackish-brown, the lower silvery-white, the sides dusky, the throat and part of the cheeks white, and a portion of the fore-neck brownish-grey.

Male, 13, 22, $5\frac{9}{12}$, $1\frac{1}{12}$, $1\frac{9}{12}$. $1\frac{9}{12}$, $\frac{3}{12}$. Female, $12\frac{1}{2}$, 20.

This species is said to frequent the sea less than the others. It is abundant in the northern parts of Europe, and occurs also in America. In winter, it is not rare in many parts of England, but I have very seldom met with it in Scotland. Montagu states that it bred in the fens of Lincolnshire, making a floating nest, and laying four or five white eggs.

Colymbus auritus, Linn. Syst. Nat. i. 222.—Podiceps auritus, Lath. Ind. Ornith. ii. 781.—Podiceps auritus, Temm. Man. d'Ornith. ii. 725.—Podiceps auritus, Eared Grebe, MacGillivray, Brit. Birds, v.

GENUS CXXXVIII. SYLBEOCYCLUS. DABCHICK.

This genus differs from Podiceps chiefly in having the body short and full; the bill not so long as the head, moderately stout, tapering, much compressed, and pointed. Upper mandible with the dorsal line straight and slightly declinate to the middle, then convex, the ridge narrow, the nasal groove half the length of the bill, the edges sharp and a little inclinate, the tip direct, acute; lower mandible with the angle long and very narrow, the dorsal line ascending and straight, the edges very sharp and direct, the tip acute.

Nostrils submedial, linear-oblong. Eyes rather small; a bare space from the eye to the bill. Aperture of ear extremely small. Feet large; tibia long, but enveloped, unless at the end; tarsus short, extremely compressed, anteriorly with small scutella, posteriorly with two series of small, prominent, pointed scales, directed downwards, the sides with broad scutella; hind toe small, with broad margins; anterior toes long, obliquely flattened, the outer longest, all with lateral expansions, and connected by webs at the base; claws small, depressed, oblong, third pectinato-serrate at the end. Plumage very soft and blended, on the lower parts silky; scapulars very long and decurved; wings small, narrow, convex, the outer two quills longest; tail a slight tuft of downy plumelets. The species are extremely active, dive and swim with amazing celerity, and feed on small fishes, aquatic coleoptera, helices, and seeds.

275. Sylbeocyclus Europæus. European Dabchick.

Male about ten inches long, with the bill ten-twelfths in length, stout, compressed, black, with the tips pale; head and neck tuftless; tarsus with the posterior scales very prominent; upper part of the head and throat black; sides and fore part of the neck chestnut; breast and sides of the body dusky; upper parts greenish-black; primary quills greyish-brown, most of the secondaries white, unless on the outer web toward the end. Female similar to the male, but smaller. Young with the lower mandible and basal sides of the upper pale-brown, the upper part dusky; the head and hind neck brownish-grey, the cheeks and sides of the neck pale-reddish, mixed with brown; the fore part of the breast and sides of the body light-yellowish-brown, the rest of the lower parts and the throat white; the upper parts dusky, the fore part of the back and the scapulars greyish-yellow. Individuals vary considerably in colour, the lower parts in particular being more or less dusky.

Male, 10, 17, 4, $\frac{10}{12}$, 1 $\frac{4}{12}$, $1\frac{1}{12}$, $\frac{3}{12}$. Female, $9\frac{1}{2}$.

The Dabchick floats, swims, dives, and, as I have ascertained from observation, flies under water, with astonishing ease and activity. When surprised, it eludes its enemy by slipping beneath the surface, and not appearing until a good way off. It is seldom seen to fly, but on wing it proceeds in a direct course, with great speed. When frightened it sinks so as to leave exposed nothing but the head. Its food con-

sists of small fishes, coleoptera, snails, and sometimes seeds. In spring it makes a low clicking and chattering sort of noise. Its nest is bulky, and placed among reeds or sedges; the eggs five or six, dull white, and elliptical. In summer it is not uncommon even in the most northern parts of Scotland, whence, however, it removes southward, and at all seasons is generally dispersed over England. On the continent it is extensively distributed, but in America has not been met with.

Dobchick. Dipper. Little Doucker or Diver.

Colymbus minor, Gmel. Linn. Syst. Nat. i. 591.—Podiceps minor, and Hebridicus, Lath. Ind. Ornith. ii. 784, 785. —Podiceps minor, Temm. Man. d'Ornith. ii. 727.—Sylbeocyclus Europæus, European Dabchick, MacGillivray, Brit. Birds, v.

The birds of the next Genus form the transition from the Grebes, properly so called, to the Guillemots and Auks. Were they numerous, they might form a distinct family; but as very few species exist, they may rather be considered as belonging to the present group.

GENUS CXXXIX. COLYMBUS. LOON.

Colymbus differs from Podiceps in having the toes connected by regular webs, and the tail, although very small, formed of regularly developed feathers. The species, few in number, are of large size. They have the bill as long as the head, almost straight, stout, much compressed, tapering, pointed; upper mandible with the dorsal line gently descending, slightly declinate towards the end, the ridge convex, gradually narrowed, the sides convex, the edges sharp and considerably inflexed, the tip narrow, the nasal groove rather long; lower mandible with the angle very long and narrow, the dorsal line ascending and straight, the edges sharp, the tip acuminate. Mouth of moderate width, extensile, opening to under the eyes; palate flattened with six series of reversed papillæ; tongue long, fleshy, trigonal, tapering, with the point slender and horny; œsophagus wide; proventriculus large; stomach moderately muscular, with large tendons, and thick rugous epithelium, having two grinding surfaces; intestine moderate, or rather long; cœca rather large. Nostrils sub-basal, small, linear, pervious. Eyes moderate. Apertures of ears very small. Head ob-

long, anteriorly narrowed; neck long, thick; body very large, elliptical, much depressed. Feet short, placed very far back; tibia almost entirely concealed; tarsus short, extremely compressed, edged before and behind, reticulated; hind toe extremely small, with a very small membrane; anterior toes slender, connected by membranes, the outer toe longest; claws very small, depressed, obtuse. Plumage short, dense; the feathers oblong; wings very small and narrow, curved, acute, with the first quill longest; tail extremely short, rounded, of more than twelve feathers.

Extremely expert divers, feeding on fishes, both marine and lacustrine. They form a rude nest on the margins of lakes, lay two or three elongated, olivaceous, spotted eggs. The young presently betake themselves to the water. Two species are common in Britain, a third of rare occurrence.

276. Colymbus glacialis. Ring-necked Loon.

Adult about three feet long, with the bill almost quite straight, three inches in length along the ridge, an inch in height at the base, with the sides flattened, the edges little inflected; the head and neck deep bluish-green glossed with purple; a patch on the throat, and a broad ring, incomplete in front, on the neck, of white longitudinally streaked with black; the upper parts black, the middle of the back and scapulars with quadrangular, its fore and hind parts, and the wings, with small round white spots, of which there are two on each feather; the sides of the lower neck streaked with white and black; the lower parts white, but the sides black, spotted with white, and a narrow dusky band across the hind part of the abdomen. Young in winter with the bill greenish-yellow, dusky on the ridge; upper plumage dark greyish-brown, the feathers edged with paler; lower parts white; sides of neck streaked with dusky, of body like the back.

Male, 36, 55, $15\frac{3}{4}$, $3_{\frac{1}{2}}^{3}$, $3_{\frac{1}{2}}^{4}$, $4_{\frac{1}{2}}^{2}$, $_{\frac{1}{2}}^{6}$. Female, 32, 52.

The Great Northern Diver, as this bird is usually called, is not very numerous with us, nor permanently resident. Narrow channels, friths, voes, sea-lochs, and sandy bays, are its favourite places of resort. It swims with great speed, sinking partially when alarmed, dives with great celerity, can remain a long time under water, and, on account of its vigilance and dexterity, is very difficult to be shot. From the middle of spring to the end of May, it is common along our northern coasts, and from October to spring young birds espe-

cially are met with from one end of the island to the other. In summer it betakes itself to the Arctic regions. The nest is large and rude; the eggs, generally three, are considerably elongated, three inches and three-fourths in length, two inches and a fourth in breadth, dull yellowish green spotted with dusky. The flesh is dark and unsavoury, the skin sometimes used for caps.

Great Northern Diver. Greatest Speckled Diver. Immer, Emmer, or Imber Goose. Gunner. Naak. Cobble.

Colymbus glacialis, Linn. Syst. Nat. i. 221, adult, Colymbus Immer, young, i. 222.—Colymbus glacialis and Immer, Lath. Ind. Ornith. ii. 799, 800.—Colymbus glacialis, Temm. Man. d'Ornith. ii. 910.—Colymbus glacialis, Ring-necked Loon, MacGillivray, Brit. Birds, v.

277. Colymbus arcticus. Black-throated Loon.

Adult about two feet and a half long; with the bill black, nearly straight, two inches and a half in length along the ridge, with the sides convex beyond the nostrils, the edges involute for half their length in the middle; the fore part and sides of the head and throat, and the sides of the neck, light bluish-grey; the upper plumage glossy bluish black, tinged with green anteriorly; on the fore part of the back two longitudinal bands of transverse white bars; the scapulars with large square white spots: upper part of fore-neck purplish black; sides of neck dusky, streaked with white; on the lower part of the neck a broad space streaked with dusky and white; lower parts white, with a longitudinal dusky band under the wings. Young in winter with the bill bluish-grey, dusky on the ridge; upper parts of head and hind-neck greyish-brown, sides of head greyish-white; upper parts of body blackish-brown, the feathers edged with pale grey; lower parts white, the sides and lower tail-coverts greyish-brown.

Male, 29, 40, $12\frac{1}{2}$, $2\frac{1}{2}$, $3\frac{1}{12}$, $3\frac{5}{12}$, $5\frac{1}{2}$. Female, 27, 38.

This species is of very rare occurrence, so that specimens are with difficulty procured. It has, however, been found breeding in the Hebrides and the extreme north of Scotland. It is generally dispersed over the northern parts of Europe and America, but appears to be everywhere less common than the other two species. The eggs, two or three, are three inches long, two in breadth, olivaceous, spotted with dusky.

Colymbus arcticus, Linn. Syst. Nat. i. 221.—Colymbus arcticus, Lath. Ind. Ornith. ii. 800.—Colymbus arcticus, Temm. Man. d'Ornith. ii. 913.—Colymbus arcticus, Black-throated Loon, MacGillivray, Brit. Birds, v.

273. Colymbus septentrionalis. Red-throated Loon.

Adult about two feet five inches long, with the bill bluish-black, slightly curved upwards, two inches and a third along the ridge, two-thirds of an inch in height at the base, with the sides prominent, the edges much inflected; the sides of the head and neck, with the throat, bluish-grey; the upper part of the head marked with small dark spots, the nape, hind, and lower parts of the neck streaked with black and white, the fore-part of the neck with a broad longitudinal band of deep orange-red; the upper parts greenish-black, without spots; the lower white, but the sides greyish-black, and a narrow dark-grey band across the hind-part of the abdomen. Young in winter with the bill flesh-coloured at the base, pale bluish-grey toward the end, the ridge dusky-brown; the upper part of the head and the hind-neck greenish-grey, finely streaked with pale grey; the cheeks and sides of the neck white, faintly dotted with grey; the fore-part of the neck white; the upper parts deep greenish-grey, glossy, and finely speckled with greyish-white, of which there are two oblong, divergent spots on each feather; the lower parts pure white, except the sides under the wings, which are dark-grey speckled with white, and a faint grey band across the hind-part of the abdomen.

Male, 26, 44, 11¾, 2$\frac{5}{12}$, 3, 3, $\frac{4}{12}$. Female, 23, 41.

This species is much more common than the Great Northern Loon. From October to April it is met with in estuaries and along the coast, from the British Channel to Cape Wrath. In summer, many pairs breed by the lakes of the northern parts of Scotland and the Hebrides. The nest is bulky and rude; the eggs, two, elongated, unequal, the larger three inches in length, an inch and eleven-twelfths in breadth, olive-brown, greenish-brown, of various tints spotted and dotted with umber. The young betake themselves to the water soon after birth. The activity of this species on the water, and in flying, is still greater than that of the Ring-necked Loon; but the habits of all the species are very similar.

Red-throated Diver. Speckled Diver. Sprat Loon.

Colymbus septentrionalis, Linn. Syst. Nat. i. 220.—Colymbus septentrionalis, borealis, striatus, and stellatus, Lath. Ind. Ornith. ii. 800, 801, 802, adult and young.—Colymbus septentrionalis, Temm. Man. d'Ornith. ii. 916.—Colymbus septentrionalis, MacGillivray, Brit. Birds, v.

FAMILY XLVI. ALCINÆ. ALCINE BIRDS, OR AUKS.

The species which constitute the family of the Alcinæ are generally of moderate size, a few, however, being small, and one or two of large dimensions. They are easily known by their general appearance; the body being large, full, compact, ovate, or somewhat elongated; the neck short and thick; the head large, broadly ovate, anteriorly narrowed. Bill short or of moderate length, much compressed, generally very high, sometimes rather slender, with both mandibles more or less pointed. The mouth rather wide; palate flat, with longitudinal ridges; tongue slender, tapering, trigonal, pointed, and thin-edged; œsophagus very wide, thin, generally much dilated in its lower part; stomach moderate, or rather large, roundish, with a moderately thick muscular coat, and dense, plicate epithelium; intestine rather long; cœca of moderate size. Nostrils small, linear, basal, sub-marginal. Eyes small. Apertures of ears very small. Feet short, rather stout, placed far behind; tibia bare for a short space; tarsus very short, compressed, anteriorly scutellate; toes three, of moderate length, connected by webs; claws rather small, strong, arched, compressed, acute. Plumage dense, soft, blended; wings small, narrow, pointed; tail very short, rounded.

The Alcinæ are marine diving-birds, which inhabit especially the cold and temperate regions of both continents, breeding on rocks or islets in the northern parts, usually in vast numbers. Owing to the position of their feet, they stand in a raised posture, walk ill, but swim with great agility. They are most expert divers, and their short firm wings are especially well adapted for aiding their progress under water. Their food consists

of small fishes, mollusca, crustacea, and other marine animals. Their flesh is very dark coloured, rank, and unpalatable. Seven species rank as British, and of these four exist in prodigious numbers in the localities suited for them.

GENUS CXL. URIA. GUILLEMOT.

The transition from Colymbus to Uria is in some respects not great, the bill being very similar in both genera. In Uria it is generally shorter than the head, straight, stout, compressed, tapering, acute; the upper mandible with the dorsal line slightly arched, the ridge narrow, the sides sloping, the edges sharp and inflected, the tip a little decurved and slightly notched; the nasal groove broad and feathered; the lower mandible with the angle rather long and narrow, the dorsal line ascending and straight, the back very narrow, the sides nearly flat, the edges sharp and inflected, the tip acute. Mouth rather wide; palate flat, with five prominent lines anteriorly; tongue slender, trigonal, tapering, pointed; œsophagus wide, its lower part and the proventriculus much dilated; stomach moderately muscular, with a dense, plaited epithelium; intestine long and rather wide; cœca moderate. Nostrils sub-basal, longitudinal, linear. Eyes of moderate size. Apertures of ears very small. Head large, ovate; neck short and thick; body full, rather depressed. Feet short, placed far behind; lower part of tibia bare; tarsus short, stout, compressed, scutellate in front; hind toe wanting, anterior toes of moderate length, the third longest, the fourth little shorter, scutellate, connected by entire webs; claws rather small, arched, compressed, rather acute. Plumage dense, very soft, blended; wings rather small, narrow, acute; primary quills curved, the first and second longest; tail very short, rounded, of twelve or more feathers.

The Guillemots assume a nearly erect posture in standing, are incapable of walking efficiently, but swim and dive with the greatest dexterity. Their flight is low, direct, and rapid. They breed on rocky headlands and islands, assembling for that purpose in vast numbers. Most of them lay a single, very large, pyriform egg, marked with dusky lines

or spots. The young seldom betake themselves to the water until of considerable size. Small fishes and crustacea are the food of these birds, which after the breeding season disperse over the seas, and in winter advance southward. Our three species are common to the northern regions of both continents. They moult twice in the year, the winter plumage being more or less differently coloured from that of summer. The eggs afford excellent eating, but the flesh is rank.

279. URIA BRUNNICHII. LARGE-BILLED GUILLEMOT.

Bill stout, black; feet dusky, tinged with red; plumage of the head and upper parts greyish-black; sides of the head and throat tinged with brown; lower parts white, sides streaked with greyish-black; edges of wings and tips of secondaries white. In winter, the sides of the head and neck, and the throat, white. In adults, there is on each side of the head a white line behind the eye.

The length of this species is about eighteen inches, its extent of wings thirty. The only authority for its occurrence in Britain known to me is that of a specimen from Orkney, which I found among some skins belonging to the late Mr Wilson, janitor of the Edinburgh University. The skin was prepared, and is now in the Museum there.

Uria Brunnichii, Sabine, Temm. Man. d'Ornith. ii. 924. —Uria Brunnichii, Large-billed Guillemot, MacGillivray, Brit. Birds, v.

280. URIA TROILE. FOOLISH GUILLEMOT.

Bill moderately stout, black; feet black. In summer, the upper parts greyish-black; the sides of the head and the throat tinged with brown; lower parts white, sides streaked with greyish-black; a line of white encircling the eye, and extending behind it; edges of wings and tips of secondaries white. In winter, the sides of the head and neck, and the fore-part of the latter white. Some individuals want the white lines on the head.

Male, 17, 30, $7\frac{1}{2}$, $1\frac{1}{2}$, $1\frac{5}{12}$, $1\frac{7}{12}$, $\frac{5}{12}$. Female, $16\frac{1}{2}$, 30.

Many individuals of this species remain on our coasts all winter. In summer it is met with congregated in vast numbers on particular rocks, whether on the coast or in islands, where it breeds. There they may be seen standing in rows, nearly erect, on the ledges, or sitting on their egg. No nest

is formed, the egg being deposited on the bare rock. It is extremely large, three inches and a quarter in length, two inches in breadth, pear-shaped, roughish on the surface, white, greenish-blue, or verdigris-green, marked with lines and spots of dusky. The young seldom go to the water until well grown. By the middle of September young and old have left the breeding-places, and dispersed over the seas. Their food consists of small fishes and crustacea. They are not easily shot on the water, as they dive very rapidly; but on the rocks can be procured in abundance, as they often sit close together, and allow a near approach. Their flight is direct, rapid, performed by quick continued beats of the wings. They are frequently seen flying in short strings of from three to ten individuals.

Murre. Marrot. Murse. Lungy. Lavy.

Colymbus Troile, Linn. Syst. Nat.—Uria Troile, Lath. Ind. Ornith. ii. 769.—Uria Troile, Temm. Man. d'Ornith. ii. 921. —Foolish Guillemot, MacGillivray, Brit. Birds, v.

281. Uria Grylle. White-winged Black Guillemot.

Bill rather slender, shorter than the head, black. In winter, the feet orange-red; the prevailing colour of the plumage white; the cheeks, neck all round, lower parts, and rump, being of that colour; the upper part of the head mottled with greyish-black; the feathers of the back tipped with greyish-white; the wings and tail brownish-black, the former with a large white patch. In summer, the feet coral-red; the plumage entirely black, excepting a patch on the wing, the lower wing-coverts, and axillar feathers, which are white. Young with the bill dusky, the feet brown; the plumage as in the adult in winter, but more mottled with blackish-grey.

Male, 13, 22, $6\frac{8}{12}$, $1\frac{4}{12}$, $1\frac{2}{12}$, $1\frac{4}{12}$, $\frac{5}{12}$. Female, $11\frac{1}{2}$, 21.

This species, prettier and more lively than the Foolish Guillemot, is not so numerous on our coasts as it, but yet occurs abundantly in many localities. It does not deposit its eggs on the bare rock, but in crevices, or under large stones or blocks. More than twenty years ago, I have frequently gathered them in such places. They are often three, but more commonly two, regularly ovate, an inch and a half in length, greyish-white, bluish-white, or yellowish-white, marked with blotches, spots, and dots of dark brown, together with faint blotches of purplish-grey. The Black Guillemot sits lightly on the water, paddles about in a very lively manner, dives with rapidity, opening its wings a little, like the other species, and flies under water with great speed. In proceeding to a distance,

they often fly in small strings, low over the water, now inclining a little to one side, then to the other. On the ground or rock they move little about, although they can walk tolerably well. All the breeding-places are to the north of the Tweed and Solway. The species is distributed over all the northern coasts of Europe and America.

Greenland Dove. Doveky. Sea Turtle. Little Guillemot. Spotted Guillemot. Puffinet. Tystie.

Colymbus Grylle, Linn. Syst. Nat. i. 200.—Uria Grylle, Lath. Ind. Ornith. ii. 797.—Uria Grylle, Temm. Man. d'Ornith. ii. 925.—Uria Grylle, Red-footed Guillemot, MacGillivray, Brit. Birds, v.

GENUS CXLI. MERGULUS. ROTCHE.

Bill very short, stout, a little decurved, as broad as high at the base, moderately compressed toward the end; upper mandible with the nasal sinus basal, broad, and angular, the dorsal line convex and declinate, the ridge convex, the sides convex at the base, sloping toward the end, the edges sharp and overlapping, arcuate, with slight sinuses close to the narrow, bluntish tip; lower mandible with the angle long, wide, and feathered, the dorsal line ascending, nearly straight, the sides sloping a little outwards, the edges sharp, the tip obtuse. Mouth of moderate width; anterior palate flat, with numerous horny reversed papillæ; tongue large, fleshy, rather obtuse; œsophagus of moderate width, proventriculus broader; stomach oblong, muscular, with dense, rugous epithelium; intestine short and narrow; cœca small. Eyes small. Nostrils basal, oblong, with a horny operculum. Head oblong, anteriorly compressed; neck short and thick; body full. Legs very short, rather slender, placed far behind; tarsus compressed, with oblique anterior scutella; no hind toe; anterior toes webbed, the inner much shorter than the outer; claws moderate, arcuate, compressed, acute. Plumage dense, blended; feathers oblong; wings small, narrow, convex, pointed; primary quills tapering, the first longest; tail very short, slightly rounded, of twelve feathers.

Only one species is known. It is intermediate between Uria and Alca, and has by various authors been referred to one or other of these genera.

282. Mergulus Alle. Little Rotche.

In winter, the upper part of the head, a portion of the cheeks, the hind part and sides of the neck, and all the upper parts of the body, black; the tips of the secondary quills, and the margins of some of the scapulars, white, as are the throat, fore-neck, breast, and abdomen; the uppermost feathers of the sides, with their inner webs, black, the lower wing-coverts greyish-brown. In summer the colours similar, but the throat and fore-neck brownish-black, like the head.

Male, $9\frac{1}{4}$, $14\frac{1}{2}$, $4\frac{10}{12}$, $\frac{8}{12}$, $\frac{9}{12}$, 1, $\frac{3}{12}$.

This species occurs in summer in very high latitudes, and in winter retires southwards, along the shores of both continents. Its food consists of small crustacea and fishes, which it procures by diving, its habits being similar to those of the Guillemots and Auks. It is of rare occurrence in Britain. I have seen two individuals on the Bass Rock, and have been credibly informed that it breeds in considerable numbers at St Abb's Head. In the winter season, it has several times been obtained in England.

Little Auk. Little Guillemot. Sea-Dove.

Alca Alle, Linn. Sys. Nat. i. 211.—Alca Alle, Lath. Ind. Ornith. ii. 795.—Uria Alle, Temm. Man. d'Ornith. ii. 928. —Mergulus Alle, Little Rotche, MacGillivray, Brit. Birds, ii. v.

GENUS CXLII. ALCA. AUK.

The Auks are very similar to the Guillemots, from which, however, they are distinguished by the form of the bill, which is as long as the head, stout, very high, much compressed, and obliquely furrowed on the sides; the upper mandible with the dorsal line decurved, the ridge extremely narrow, the sides nearly flat, the nasal groove very large and feathered, the edges sharp and inflected, the tip decurved, narrow, and obtuse; the lower mandible with the angle very narrow, and having a horny triangular appendage, the sides toward the end erect and flat, the dorsal line ascending and concave, the tip decurved; mouth of moderate width; palate flattened with five prominent lines anteriorly; tongue slender, trigonal, tapering, pointed; œsophagus wide, in its lower part, and the proventriculus enormously dilated; stomach small, elliptical, with the muscular coat rather thin, the tendons round, the epithelium thin,

dense, longitudinally plicate; intestine moderate; cœca small. Nostrils linear-oblong, marginal, medial. Eyes small. Apertures of ears very small. Head large, ovate, anteriorly compressed; neck short and thick; body full, rather depressed. Feet short, placed far behind, lower part of tibia bare; tarsus very short, stout, compressed, scutellate in front; hind toe wanting; anterior toes of moderate length, the inner shortest, all connected by entire webs; claws rather small, arcuate, compressed, pointed. Plumage dense, very soft, blended; wings small, narrow, acute; tail very short, rounded, of twelve or more feathers.

The Auks are precisely similar to the Guillemots in their habits. One species is of frequent occurrence along our coasts, breeding in the same places as the foolish Guillemot, and afterwards dispersing over the seas. Another species, the Great Auk, which some place in a separate genus, is met with very rarely on the northern coasts of Scotland.

283. Alca Torda. Razor-billed Auk.

Length about seventeen inches; wings reaching to the middle of the tail, which has twelve feathers; bill with four transverse grooves, one of which is white. Adult in summer with the head and upper part of the neck all round brownish-black, the upper parts greenish-black, the lower white; a narrow line from the bill to the eye, and the terminal margins of the secondary quills white. In winter, the upper part of the head and nape greyish-black, the throat and sides of the head white, with a dusky band behind the eye, the other parts nearly as in summer. Young at first coloured like the adult in summer, afterwards like the adult in winter, but always distinguishable by having the bill smaller, much less elevated, without grooves, and black.

Male, $17\frac{1}{2}$, 28, $8\frac{2}{12}$, $1\frac{7}{12}$, $1\frac{1}{4}$, $1\frac{8}{12}$, $\frac{4}{12}$. Female, $16\frac{1}{2}$, 27.

In autumn great numbers of Razor-bills appear on the bays and estuaries of all parts of Scotland and England. They advance southward as the cold increases, and almost entirely desert the northern parts, unless when shoals of young fishes are on the coast. Toward the end of spring they proceed in parties to their breeding-places, which are abrupt headlands or rocks on unfrequented islands, and on which they settle, along with the Guillemots and Kittiwakes. Their single egg is extremely large, oblong, somewhat pyriform, three inches or a little less in length, white, greyish, or brownish-

white, largely blotched, clouded, sprinkled, and dotted with deep brown or black, and having spots of paler brown and light purplish-blue interspersed. The Razor-bills feed on small fishes and crustacea, which they procure by diving, at which they are extremely expert. They can remain a considerable time under water, and are often seen to rise at a great distance. Their flight is direct, rapid, performed by quick continued beats of the wings, several individuals usually forming a string. Their flesh is dark and unsavoury, but the eggs afford good eating.

Razor-bill. Common Auk. Falc. Gurfel. Murre. Marrot.

Alca Torda, Linn. Syst. Nat. i. 210, summer; Alca Pica, i. 210, winter.—Alca Torda, Lath. Ind. Ornith. ii. 793.—Alca Torda, Temm. Man. d'Ornith. ii. 936.—Alca Torda, Razor-billed Auk, MacGillivray, Brit. Birds, v.

284. Alca impennis. Great Auk.

Length about thirty inches; wings diminutive, with the quills scarcely longer than their coverts; the tail short, of fourteen feathers; bill rather longer than the head, black, with eight or nine white grooves on the upper, ten or twelve on the lower mandible; the head, neck, and upper parts black, the throat and sides of the neck tinged with chocolate-brown, the wings with greyish-brown, the upper parts glossed with green; the lower parts, and a large oblong spot before each eye, with the tips of the secondary quills, white.

Adult, 30, 28, 7, $3\frac{3}{4}$, 2, $2\frac{1}{4}$, $\frac{9}{12}$.

This species is met with in high latitudes, along the coasts of both continents, but not in great numbers. A few individuals have been seen about the islands of St Kilda and our north-eastern islands. One was captured in 1822, but made its escape. The habits of this remarkable bird are little known. It is supposed, rather than observed, to be incapable of flying.

Garefowl.

Alca impennis, Linn. Syst. Nat. i. 210.—Alca impennis, Lath. Ind. Ornith. ii. 791.—Alca impennis, Temm. Man. d'Ornith. ii. 939.—Alca impennis, Great Auk, MacGillivray, Brit. Birds, v.

GENUS CXLIII. MORMON. PUFFIN.

The Puffins resemble the Auks, but have the bill still more elevated. It is about the length of the head, nearly as high as long, extremely compressed, obliquely grooved on

the sides; upper mandible with a strong dotted rim along its basal margin, the dorsal line decurved, the ridge narrow, the sides rapidly sloping, the edges sharp, the tip deflected, very narrow, obtuse; lower mandible with the angle very narrow, inflected beyond the perpendicular, the dorsal line ascending, more or less convex, the sides perpendicular, the edges thin, the tip small and blunt; the gape-line extending downwards a little beyond the base of the bill, and having a soft corrugated extensile membrane at the commissure. Nostrils linear, marginal. Eyes rather small, generally with small horny plates in their vicinity. Apertures of ears very small. Head large, roundish, ovate; neck short and thick; body full and rounded. Feet short, moderately stout, placed far behind; tibia bare for a short space; tarsus very short, little compressed, anteriorly with small scutella; hind toe wanting, toes connected by entire webs, the outer and inner about equal; claws strong, arched, acute, that of the inner toe much curved. Plumage dense, soft, blended; wings short, narrow, much curved, acute; tail very short, slightly rounded, of sixteen feathers.

The Puffins, which belong to the arctic regions of both continents, resemble the Auks in form and habits, with this exception, that they generally burrow in the turf, and deposit their eggs under ground. They swim and dive with the greatest dexterity, feed upon small fishes, crustacea, and mollusca, are capable of walking somewhat better than the Auks or Guillemots, and are especially remarkable for the form of their bill, which, viewed laterally, somewhat resembles that of a parrot, although, being extremely compressed, its form is very different.

285. Mormon arcticus. Arctic Puffin.

Bill with three curved furrows on each mandible towards the end; the basal rim and first ridge of both mandibles dull yellow, the intervening broad space greyish-blue, the rest bright red; a flattened triangular horny body on the upper eyelid, and an elongated adherent plate on the lower; throat and sides of the head greyish-white; upper part of the head greyish-black; middle of the neck all round, and all the upper parts black, glossed with blue; lower parts white, unless under the wings, where the feathers are dusky-grey.

Male, $11\frac{1}{2}$, 23, 7, 2, 1, $1\frac{1}{2}$, $\frac{6}{13}$. Female, $10\frac{1}{2}$, 22.

Puffins are not observed on our coasts in winter, for, although they breed much farther north than Britain, they proceed in autumn farther toward the equator. In the end of spring they make their appearance about the islands and headlands on which they breed, on various parts of the coast of England and Scotland, as the Fern Islands, Puffin Island in the Frith of Forth, Priestholm in Anglesey, the Isle of Mann, Berneray of Barray, and St Kilda. They dig holes in the earth, from two to three feet in length, in which a single egg is deposited. It is white, oval, two inches and a half long, an inch and ten-twelfths in breadth, the young remain in the burrows until well grown, and all the individuals disperse by the middle of August. Although rank, the flesh of this bird is often eaten. The Puffins fly with rapidity, and are very active upon and in the water, being more lively than even the Auks and Guillemots, which, however, they resemble in their habits.

Coulterneb. Bottle-nose. Tammie-norrie, Tommy-noddy, Tommy. Cockandy. Pope. Sea Parrot.

Alca arctica, Linn. Syst. Nat. i. 211.—Alca arctica, Lath. Ind. Ornith. ii. 792.—Mormon Fratercula, Temm. Man. d'Ornith. ii. 933.—Mormon arcticus, Arctic Puffin, MacGillivray, Brit. Birds, v.

We come now to a family in many respects among the most remarkable of the Palmipede series, and to which it is impossible to assign a definite station among either the Divers or Plungers, some of them being in habits swimming and diving birds, and others plunging-birds, incapable of diving without ascending in the air, and falling headlong on their prey. Their whole organization, however, indicates a much greater affinity to the Urinatrices than to the Mersatrices; and for this reason they may be considered as forming a transitional or aberrant family of that order.

FAMILY XLVII. PELECANINÆ. PELECANINE BIRDS, OR PELICANS, CORMORANTS, AND GANNETS.

The Pelecaninæ are with us represented only by two species of Cormorant, and a Gannet, two genera which

would not appear to the student to have any very direct affinity, but which he would recognise as parts of a system, were he to examine the internal structure, and especially the digestive organs of the Anhingas, Pelicans, Frigate-birds, Boobies, and Phaetons. Some of the general characters of the family are as follows.

Body elongated, rather slender; neck long, or moderate, generally thick; head ovate. Bill longer than the head, opening to beneath or beyond the eyes, generally rather slender, straight; upper mandible with the ridge separated from the sides by grooves, and terminated by a narrow, generally decurved, pointed unguis; lower mandible with the crura elastic and extensile, the angle very long and narrow, the tip unguiculate. Skin of the throat more or less extended and bare, so as to form a pouch; space around and before the eye generally bare. Eyes rather small, nostrils basal, lateral, linear; small, or entirely obliterated. Apertures of ears very small. Tongue extremely diminutive, triangular, fleshy; œsophagus excessively wide, more dilated below; proventricular glands in two discontinuous patches; stomach very small, slightly muscular, with the epithelium smooth; a globular lobe at the pylorus in every species; intestine long and slender; cœca small, cylindrical; cloaca large and globular. Trachea without inferior laryngeal muscles. Feet short, stout; tibia bare at its lower part; tarsus compressed; toes four, all connected by membranes, the inner toe small, and directed inwards and backwards, the outer longest; claws short, strong, curved, that of the third toe generally pectinate. Plumage soft, blended, on the back compact and imbricated; wings long; tail of moderate length, narrow, rounded, the shafts of its feathers strong.

These birds present a great uniformity in the structure of the digestive organs and feet, as well as in the form of the skeleton; but they differ greatly in external appearance, and in habits; some swimming on the surface,

and diving in pursuit of their prey, others hovering in the air, and plunging headlong into the water. They perch on rocks or trees, nestle in such places, lay from one to three or four bluish-white eggs, of an elongated form, and always crusted with calcareous matter. The young, which are at first covered with down, remain in the nest until fledged. Representatives of two genera, Phalacrocorax and Sula, occur in Britain. These genera, forming the extremes of the series, differ considerably in form and habits.

GENUS CXLIV. PHALACROCORAX. CORMORANT.

The Cormorants are birds of large or moderate size, having the body large and elongated; the neck long and stout; the head oblong, anteriorly narrowed. Bill about the length of the head, straight, rather slender, somewhat compressed, opening from far behind the eyes; upper mandible with the ridge convex, separated by very narrow grooves from the sides, which are convex and irregularly scaly, with a slender separate piece at the base, the edges sharp, the unguis narrow, convex, decurved, obtuse, but thin-edged; lower mandible with the angle very long and narrow, the intercrural membrane partly bare, the sides scaly and somewhat convex, the edges sharp and inflected, the tip compressed, obliquely truncate, formed of an involute unguis, with a slender intercalated piece. Mouth wide and very dilatable, the mandibles having a kind of joint on each side; palate flat, with two ridges; tongue extremely small, ovato-lanceolate, carinate above; œsophagus extremely wide, and below dilated into an enormous sac; proventricular glands in two round disks; stomach roundish, large, with the muscular coat very thin, the inner soft and smooth; pyloric lobe roundish; duodenum at first curved forwards, intestine of moderate length and width; cœca very short and obtuse. Nostrils obliterated in the adult, open in the young. Eyes rather small, eyelids and a large space at the base of both mandibles bare. Aperture of ear very small. Feet short, stout, placed far behind; tibia feathered to the joint; tarsus very short, re-

ticulated; toes obliquely scutellate, webbed, the outer longer; claws strong, curved, compressed, acute, that of the third toe pectinate. Plumage of the head, neck, lower parts, and rump, glossy, blended, silky, of the wings and fore-part of the back compact, imbricated; wings rather large and broad; primaries short, strong, obtuse, the first longest; tail rather small, rounded, of from twelve to sixteen narrow, strong-shafted feathers.

Species occur on almost every rocky coast of both continents. They feed entirely on fish, swim and dive with extreme agility, sink in the water when alarmed, have a moderately quick even flight, perch on rocks and trees, and nestle in both situations. In diving, they generally leap out of the water, and descend in a curve. Two species occur in Britain.

286. PHALACROCORAX CARBO. GREAT CORMORANT.

Length about three feet; tail of fourteen feathers; imbricated feathers of the back and wings ovate, rounded, with silky margins. Adult in winter crestless; the plumage silky, greenish-black, tinged with blue; of the back and wings greyish-brown or bronzed, with greenish-black margins; a greyish-white band on the throat, ascending to the eyes; some scattered, extremely minute, piliform pencil-tipped, white plumelets on the head and neck, and a few white streaks over the thigh. Adult in spring coloured as in winter, with the addition of a longitudinal greenish-black crest, numerous linear white feathers on the head and neck, the throat-band pure white, and a roundish patch of that colour on each side, over the thigh. Young with the head and hind-neck dusky brown, streaked with brownish-grey; cheeks and fore-neck greyish-white, mottled with brownish-grey; a brownish-white band on the throat; lower parts greyish-white, mottled with dusky, becoming darker behind; upper parts nearly as in the adult.

Male, 38, 60, 14, $3\frac{2}{12}$, $2\frac{2}{12}$, $2\frac{8}{12}$, $\frac{8}{12}$. Female, 35, 58.

This species occurs in considerable numbers here and there, on all our rocky coasts, resting on headlands and rugged insular crags, and fishing in the bays and estuaries. They swim and dive with extreme agility, feed on small fishes, which, on coming to the surface, they toss about in their bill, or throw up into the air, to bring them into a favourable position for being swallowed. They alight heavily, keep in a

much inclined position, walk very little, fly with a moderately quick, sedate, and even flight, at a small height, are generally shy, and difficult to be shot, and form very large rude nests, of sticks and sea-weeds. The eggs, generally three, are oblong, two inches and eight-twelfths in length, and inch and three-fourths in breadth, with a thick roughish, bluish-white shell, thickly crusted with white calcareous matter. The young at first have the skin bare and dusky or dull livid, in a few days are covered with brownish-black down, and in about eight weeks are able to fly. For about six months, they have the nostrils open, and the middle claws entire. The flesh is dark-coloured and rank, and the eggs unfit for being eaten, as in all the Cormorants.

White-spot Cormorant. White-headed Cormorant. Crested Cormorant. Great Scart or Scarve. Coal Goose.

Pelecanus Carbo, Linn. Syst. Nat. i. 216.—Pelecanus Carbo, Lath. Ind. Ornith. ii. 886.—Carbo Cormoranus, Temm. Man. d'Ornith. ii. 894.—Phalacrocorax Carbo, Great Cormorant, MacGillivray, Brit. Birds, v.

287. Phalacrocorax Graculus. Green Cormorant.

Length about two feet and a quarter; tail of twelve feathers; imbricated feathers on the back ovate, rather acute, with velvety margins. Adult in winter crestless; the plumage glossy, blackish-green; feathers of the wings and forepart of the back of a lighter green, with deep black margins; some scattered, extremely minute, piliform, pencil-tipped white plumelets on the neck. In spring, an additional tuft of oblong, erect, recurved feathers, about two inches in length, on the top of the head. Young with the head and hind-neck greenish-brown, the rest of the upper parts darker, the imbricated feathers of the back and wings with glossy margins; the lower parts brownish-grey; the throat and part of the breast inclining to white.

Male, 29, 42, $10\frac{1}{2}$, $5\frac{1}{2}$, $2\frac{3}{12}$, 4, $4\frac{1}{2}$. Female, 26, 38.

The Crested Cormorant is generally distributed along our coasts, and very abundant in many parts of Scotland, residing chiefly in caverns and fissures of the rocks, where it also breeds. The nest is bulky; the eggs two or three, subelliptical, very narrow, bluish-white, two inches and a quarter long, and inch and a half in breadth. It sits deep on the water, when alarmed sinks so as to expose only the head and neck, swims and dives with extreme dexterity, feeds on small fishes, can scarcely walk, stands in a much inclined posture, and emits a croaking cry. Its flesh is dark-coloured and rank,

but is often eaten by the poor, as are the young. Neither this nor the other species fly under water, but propel themselves by synchronous beats of the feet, with amazing speed. Both may be tamed, but this less easily than the other. Their affection for their young is very great.

This being certainly Pelecanus Graculus of Linnæus and Latham, I see no reason for changing the name to cristatus, and transferring it to another species.

Crested Cormorant, Shag-Scart. Green Scart or Scarve. Common Scart. Green Scout.

Pelecanus Graculus, Linn. Syst. Nat. i. 217.—Pelecanus Graculus, Lath. Ind. Ornith. ii. 887; cristatus, 888.—Carbo cristatus, Temm. Man. d'Ornith. ii. 900.

GENUS CXLV. SULA. GANNET.

The Gannets, of which one species occurs on our coasts, are organized for plunging from a height upon their finned prey, and are thus physiologically out of place among the Divers. In fact one half of the family of the Pelecaninæ belongs to the Urinatrices, and the other to the Mersatrices.

In the genus Sula, the body is of moderate bulk, rather elongated; the neck of moderate length, and very thick; the head large. Bill longer than the head, opening beyond the eyes, straight, elongated, conical, moderately compressed; upper mandible with the ridge very broad, convex, separated by grooves from the sides, which are slightly convex and perpendicular, with a slender jointed additional piece beneath the eye, the edges sharp, direct, irregularly jagged with numerous incisions directed backwards, the tip a little decurved, and rather acute; lower mandible with the angle extremely long and narrow, the sides erect and convex, the edges sharp and serrated, the tip compressed and acute. There is a small gular sac, of which a part is bare. Mouth wide, pale, flat, ridged; tongue extremely small, blunt; œsophagus extremely wide, much dilated below; proventricular glands forming a broad belt, partially divided; stomach extremely small and thin; intestine of moderate length, slender; cœca very small. Nostrils obliterated in the adult, open in the young. Eyes rather small, surrounded and preceded by a bare space. Apertures of ears small. Feet short, placed rather far behind; tibiæ concealed by the

general integument; tarsus very short, sharp behind, scaly, with three lines of small scutella, which run along the toes. First toe rather small, directed a little forwards, middle toe longest; all connected by webs; claws moderate, slightly arched, that of the third toe pectinate. Plumage close, on the head and neck blended; wings very long, narrow, acute; tail rather long, graduated, of twelve or fourteen feathers.

The Gannets belong especially to the warmer regions. One species extends far into the temperate and colder parts, proceeding on both sides of the Atlantic in summer into the arctic seas, or taking stations for breeding at intervals. They fly at a moderate height, with a steady motion, and plunge headlong after their prey into the water, on which they never swim about in quest of food, and into which they cannot penetrate otherwise than by falling from a height.

288. Sula Bassana. Solan Gannet.

Bill pale bluish-grey, tinged with green at the base; bare space about the eyes, lines on the bill, and gular membrane, blackish-blue; feet brownish-black, the scutella light greenish-blue; claws greyish-white; plumage white; upper part of head and hind-neck buff-coloured; primary quills brownish-black. Young when fledged with the bill greyish-brown, the bare spaces on the head pale greyish-blue; the feet dusky; head, neck, and upper parts dark greyish-brown, each feather with a small terminal triangular white spot; lower parts greyish-white, spotted with greyish-brown; quills and tail-feathers brownish-black.

Male, 39, 74, $20\frac{1}{2}$, 4, $2\frac{2}{12}$, $3\frac{8}{12}$, $\frac{7}{12}$. Female, 38, 73.

Gannets are sometimes seen on the southern coasts of England in winter. Generally, however, they arrive in February or March, and depart in October. There are two breeding-places in England, and but few in Scotland: the Bass Rock, Suliskerry, Ailsa Craig, St Kilda, and Ronay. They form their nests of turf and sea-weeds, placing them on the rocks, or sometimes on the ground. In each nest there is only a single egg, of an elongated oval form, bluish-white, with a chalky surface. The young are at first covered with close white down, and at the end of three months are able to fly. They are fed with partially digested fish poured into their throats. The Gannet alights heavily, stands in an inclined position, walks very awkwardly, launches on wing in a curved line, extends its neck and feet, flies rather steadily and slowly,

carries food to its young in its gullet, never in its bill, and utters a harsh cry, resembling *carra, carra, crak, crak.* At St Kilda vast numbers are killed as food, and for their feathers. At the Bass and Ailsa, they are also, in smaller numbers, similarly used.

Solan Goose.

Pelecanus bassanus, Linn. Syst. Nat. i. 217.—Pelecanus bassanus, Lath. Ind. Ornith. ii. 891.—Sula alba, Temm. Man. d'Ornith. ii. 905.—Sula Bassana, Solan Gannet, MacGillivray, Brit. Birds, v.

ORDER XIX. MERSATRICES. PLUNGERS.

While some of the fishing sea-birds, as we have seen, obtain their food by diving from the surface of the water, and pursuing their prey beneath it, others, although web-toed, and capable of swimming, never enter into the water, unless momentarily by plunging or dipping into it from on wing. Of this latter kind are the numerous species, some of which are found in all latitudes, and even in the midst of oceans, far from land, to which collectively I have given the name of Mersatrices. Terns, Gulls, Albatrosses, and Petrels, are familiar examples of this order. They are peculiarly erratic birds, which, unless when fixed to a place for a time by the cares of breeding, wander about in search of their food, which consists essentially of fishes, but also of crustacea, mollusca, worms, insects, and sometimes carcasses of whales, land mammalia, and birds. Their structure is, of course, in conformity with this mode of life: they can usually walk with ease, wade in the shallows, swim lightly, and fly in an easy and buoyant manner. Their general characters seem to be the following:—

Birds of large, moderate, or small size, having the body ovate, rather light in proportion to their bulk; the

neck of moderate length, or short, and rather thick; the head large, broadly ovate, anteriorly narrowed. The bill of moderate length, generally stout, straight, compressed, more or less decurved at the end, opening to beneath the eyes. Mouth rather wide, tongue fleshy, rather narrow, tapering, pointed, horny beneath at the end; œsophagus very wide throughout, with its walls thin; proventriculus dilated; stomach small, muscular, with distinct lateral muscles, large radiated tendons, and thick, dense, longitudinally ridged epithelium; intestine rather long, narrow; cœca very small, cylindrical; rectum with a large globular dilatation. Nostrils rather large, elongated, subbasal or medial, but various. Eyes rather small, eyelids feathered, with crenulate margins. Aperture of ear of moderate size. Legs of moderate length, or short, rather slender; tibia bare below; tarsus little compressed, anteriorly scutellate; toes of moderate length, slender, webbed, spreading, the first very small and elevated, or wanting; claws small, arcuate, rather obtuse. Plumage very full, close, and soft; feathers generally oblong and rounded; wings very long, rather narrow, much pointed; tail generally moderate.

This order may be divided into STERNINÆ, LARINÆ, and PROCELLARINÆ. There can be no difficulty in referring any one of the species to its order, as the general characters are very distinctive. They are usually clamorous when engaged in searching for food. The smaller species feed chiefly on small fishes and crustacea; the larger are in a great measure omnivorous. They usually nestle on the ground, laying from three to five eggs, which are oval, and spotted; but some which lay in holes, have white eggs. The young, at first densely covered with down, can walk and even run presently after emerg-

ing from the egg, but, unless disturbed, remain some time in the nest, or conceal themselves among the herbage or stones. The males are little larger than the females, and generally the sexes are coloured alike. The young are differently coloured from the adult.

FAMILY XLIX. STERNINÆ. STERNINE BIRDS, OR TERNS.

Although the Terns or Sea-Swallows are closely allied to the Tropic-Birds on the one hand, and to the Gulls on the other, it seems expedient to keep them separate, as a family, from the latter, as they generally differ so much in form and habits as to be easily distinguishable. They are all of small size, and remarkable for the extreme buoyancy of their flight. The body is very slender; the neck of moderate length, or short. The head oblong, and of moderate size. Bill about the length of the head, rather slender, compressed, nearly straight, tapering to a narrow point. Palate with three longitudinal ridges; tongue very slender, tapering, with the point slit; œsophagus extremely wide; stomach moderate, muscular, with roundish tendons, and dense, broadly rugous epithelium; intestine moderate, cœca small and cylindrical. The trachea with a single pair of inferior laryngeal muscles. Nostrils subbasal, linear, direct, pervious. Eyes of moderate size. Apertures of ears rather large. Feet very small; tibia bare below; tarsus very short, slender, scutellate before; toes very small, the first extremely so, the fourth considerably shorter than the third; the anterior toes with webs deeply concave at the margin; claws arched, compressed. Plumage soft, close, blended, the feathers broad and rounded; wings very long, narrow, pointed, the outer primaries slightly curved inwards; tail long, of twelve feathers, forked, sometimes even, rounded, or graduated.

The Terns, not inaptly compared to Swallows, are remarkable for their gliding, hovering, desultory, wavering, and buoyant flight, their screaming cries, social disposition, and irritable temperament. They deposit on the bare sand their light-coloured and darkly-spotted eggs, defend them and their young with pertinacity; feed on small fishes, crustacea, and insects, which they procure by hovering over the water, and dipping into it. They walk very awkwardly on account of the shortness of their feet. The plumage of the sexes is alike, but the young are mottled, and do not acquire their permanent colours until the third year.

GENUS CXLVI. STERNA. TERN.

Some Terns have the bill stronger than others, as might be expected in an extensive genus, yet without presenting characters by which they might with propriety be generically distinguished. They are all of small size, with the body slender, the neck rather short, the head ovate. Bill about the same length as the head, nearly straight, tapering, finely pointed; upper mandible with the dorsal line slightly arched, the sides sloping, the edges sharp and inflected, the tip very slender; the nasal groove rather long, with a faint ridge and groove extending obliquely to the edge; lower mandible with the angle very narrow, the dorsal line straight, the sides convex, the edges sharp, the tip very acute. Palate with three longitudinal ridges; tongue slender, tapering, papillate at the base, horny and slit at the point; œsophagus very wide and thin; stomach muscular, with round tendons, and dense prominently rugous epithelium; intestine of moderate length and width; cœca very small, cylindrical. Nostrils basal, oblong, direct, pervious. Eyes of moderate size. Apertures of ears moderate. Feet small; tibia bare below; tarsus very short, compressed, anteriorly scutellate; toes small, slender, the first extremely small, the third longest, all scutellate, the anterior connected by reticulated webs, of which the inner is more deeply emarginate; claws arched, compressed, slender. Plumage close, blended, very

short on the fore part of the head; wings very long, narrow, pointed; primary quills tapering to an obtuse point, the first longest; tail of moderate length, or long, forked, of twelve feathers.

The Terns, properly so called, are slender, elegantly-formed birds, of which some species occur on almost all sandy coasts. Their wings are always very long and pointed, the tail forked. Their prevailing colours are white beneath, pale greyish-blue above, with the upper part of the head black. The occipital feathers are always elongated. In the colder regions they reside only in summer, at which season several species extend even to the borders of the polar ice. Even in Britain, none are usually found during the winter. They deposit their eggs on the ground. The young are mottled, and remain in the nest, or near it, until able to fly.

289. Sterna Caspia. Caspian Tern.

Bill stout, tapering, longer than the head, vermilion; feet black; tail forked, shorter than the wings. In winter, the forehead and crown white, the occiput variegated with black. In summer, all the upper parts of the head deep black. Hind-neck, back, and wing-coverts pale greyish-blue; lower parts white; primary quills greyish-brown; tail pale grey. Young with the bill dull red, the upper plumage pale greyish brown, variegated with black; lower parts white.

Male 22, 43, 14, $2\frac{3}{4}$, $1\frac{1}{2}$, $1\frac{4}{12}$, $\frac{5}{12}$.

This species, which, on account of its comparatively large bill, some have referred to a separate genus, has been met with in a few instances on the south-eastern coasts of England. It is said by M. Temminck to inhabit the shores of the Baltic, Caspian, and Mediterranean Seas, but to be of rare or accidental occurrence on the western coasts of Europe. He also informs us that it nestles on the sand, in a slight hollow, or on rocks bordering the sea, and lays two or three eggs, of a greyish-green colour, sprinkled with large brown and deep black spots.

Sterna Caspia, Gmel. Syst. Nat. i. 603.—Sterna Caspia, Lath. Ind. Ornith. ii. 803.—Sterna Caspia, Temm. Man. d'Ornith. ii. 733.—Sterna Caspia, Caspian Tern, MacGillivray, Brit. Birds, v.

290. Sterna Cantiaca. Sandwich Tern.

Bill rather longer than the head, black, with the points

yellowish; feet black, with the soles yellow; tarsus an inch and a twelfth long; tail much forked, shorter than the wings. In winter, the upper part of the head and the nape deep black. In summer, these parts white, spotted with black. Throat, cheeks, neck all round, hind part of back, tail, and all the lower parts, white, tinged with rose-colour, which is brighter in summer. Young with the upper part of the head variegated with black, white, and pale reddish; fore-part of back and scapulars reddish, barred with blackish-brown; lower parts white; bill livid, with the extreme tips yellowish.

Male, 16, 33½, 12½, 2 3/12, 1 1/12, 1 2/12, 1 4/12. Female, 15¾, 33.

This species has a strong and rapid flight, and, except when engaged in incubation, is almost constantly on wing all day, uttering at intervals a grating cry, which can be heard at a great distance. It feeds upon small fishes and crustacea, which it picks up from the water. It arrives about the middle of May, and departs by the end of September. A shallow hole in the sand or turf receives the eggs, which are three, in size about equal to those of the Golden Plover, being two inches and a twelfth long, of a cream or wood-brown colour, blotched with dark-brown and black, together with fainter markings. The species is very extensively dispersed along the coasts of both continents. With us, it is chiefly in the south-eastern parts of England that it occurs, but I have also obtained several specimens from the mouth of the Frith of Forth. Smaller and less robust than the Caspian Tern, it is considerably larger and stouter than the Common and Roseate Terns, from which it is at once distinguishable by its black, yellow-tipped bill.

Sterna Cantiaca, Gmel. Syst. Nat. i. 606.—Sterna Boysii, Lath. Ind. Ornith. ii. 806.—Sterna Cantiaca, Temm. Man. d'Ornith. ii. 735.—Sterna Cantiaca, Sandwich Tern, MacGillivray, Brit. Birds, v.

291. Sterna Hirundo. Common Tern.

Bill about the same length as the head, rather slender, bright coral-red, towards the end black, the tip light yellow; feet coral-red; tarsus ten-twelfths long; wings slightly longer than the tail, which is very deeply forked. In winter the upper anterior part of the head white, the hind part dusky. In summer the upper part of the head, and the hind-neck half-way down, deep bluish-black, anteriorly tinged with brown; sides of head, fore-neck, and lower parts, white, the breast slightly tinged with greyish-blue; back, scapulars, and wing-coverts, light greyish-blue; edges of wings, rump, and

upper tail-coverts white, tinged with grey; the outer six quills with their outer webs and part of the inner hoary black. Young with the bill greenish-black, yellow at the tip, the feet greenish-yellow, the plumage of the upper parts light brown mottled with greyish.

Male, 16, 32, $11\frac{1}{4}$, $1\frac{4}{12}$, $\frac{1}{12}$, $\frac{1}{12}$, $\frac{3}{12}$. Female, 15, 31.

This species, which is common on all our sandy shores, arrives early in May, and departs in September. It breeds on unfrequented sands, headlands, islands, and sometimes rocky places, depositing its eggs in a slight hollow. The eggs, generally three, vary greatly in colour, being greyish-yellow, olivaceous, or brownish, blotched with black and purplish-grey, their length an inch and three-fourths, their breadth an inch and a quarter, or a little more. It is remarkably bold in defence of its eggs or young, and will come up close to a person, screaming incessantly. Its flight is extremely buoyant, undulating, and gliding. It hovers over the waters, and dips with such force as sometimes to immerse itself entirely. Its food consists of small fishes, especially sand-eels, shrimps, and other marine animals. It is frequently found intermingled with the next species.

Sea-Swallow, Tern. Starnag. Pictarn.

Sterna Hirundo, Linn. Syst. Nat. i. 227.—Sterna Hirundo, Lath. Ind. Ornith. ii. 807.—Sterna Hirundo, Temm. Man. d'Ornith. ii. 740.—Sterna Hirundo, Common Tern, MacGillivray, Brit. Birds, v.

292. Sterna arctica. Arctic Tern.

Bill about the same length as the head, slender, vermilion tinged with carmine, as are the feet; tarsus eight-twelfths long, wings about two inches longer than the tail, which is very deeply forked. In summer, the upper part of the head and nape greenish-black, the upper parts pale greyish-blue, the rump bluish-white, the tail and its coverts white, except the outer webs of the lateral feathers, which are dusky-grey; the primaries dusky toward the end, the outer two with their outer webs blackish; the cheeks, neck, breast, and sides pale greyish blue, of a lighter tint than the back; the abdomen, and lower surface of the wings and tail, white.

Male, 15, 32, $10\frac{1}{2}$, $1\frac{1}{12}$, $\frac{8}{12}$, $\frac{8}{12}$, $\frac{3}{12}$. Female, $14\frac{1}{2}$. 31.

The Arctic Tern, which may easily be distinguished from the Common Tern, even on wing, as well as by its cry, which is shriller, is however precisely similar in its habits to that species, and frequently occurs intermingled with it. In the northern and western islands of Scotland, on many parts of

the coasts of the mainland, as in the Frith of Forth, and in various parts of England, it is very abundant. The eggs, deposited in sandy or rocky places, are like those of the Common Tern, an inch and three-quarters in length, and an inch and two or three twelfths in breadth.

Sterna arctica, Temm. Man. d'Ornith. ii. 742.—Sterna arctica, Arctic Tern, MacGillivray, Brit. Birds, v.

293. Sterna Macdougalli. Roseate Tern.

Bill about the same length as the head, slender, orange-red at the base, then black; feet vermilion; wings about three inches shorter than the tail, which is very deeply forked. In summer, the upper part of the head and nape bluish-black; the upper parts pale bluish-grey; the tail of a lighter tint, but the outer webs of the lateral feathers dusky-grey; primary quills dusky toward the end, the outer three with their outer webs and part of the inner hoary black; the hind-neck white, fore-neck, breast, and sides, of a delicate pale roseate hue; lower surface of wings and tail white.

Male, $14\frac{1}{2}$, 30, $9\frac{1}{2}$, $1\frac{1}{2}$, $\frac{12}{12}$, $\frac{12}{12}$, $\frac{4}{12}$.

This beautiful Tern was discovered by Dr Macdougall on the Cumbray islands in the Frith of Clyde, and described by Montagu, who gave it the specific name of Dougallii. It has since been found on various parts of the coast, both in England and Scotland. It is said also to occur on the continent, and Mr Audubon found it breeding in abundance on the Florida Keys. Its flight is peculiarly light and buoyant, but its habits are similar to those of the Common and Arctic Terns. The eggs are an inch and nine-twelfths in length, an inch and a twelfth in breadth, yellowish-grey or olivaceous, spotted with dark-brown.

Sterna Dougallii, Mont. Ornith. Dict. Suppl.—Sterna Dougallii, Temm. Man. d'Ornith. ii. 738.—Sterna Macdougalli, Roseate Tern, MacGillivray's Brit. Birds, v.

294. Sterna nigra. Black-breasted Tern.

Bill about the same length as the head, rather slender, brownish-black; feet reddish-brown; wings two inches longer than the tail, which is but slightly forked, or merely emarginate. In summer, the head, neck, breast, sides, and abdomen, greyish-black; upper parts dark bluish-grey; shafts of quills and tail-feathers white; outer web of first quill greyish-black; lower wing-coverts bluish grey, lower tail-coverts white. In winter, the fore-part of the head, and the fore-neck white; the other parts as in summer. Young

with the forehead and lower parts white; a black band before the eyes, and a greyish-black patch on each side of the breast; upper and hind parts of the head black; back and scapulars brown, lunated with reddish-white.

Male, 9, 24, $8\frac{3}{4}$, $1\frac{1}{12}$, $\frac{8}{12}$, $\frac{8}{12}$, $\frac{5}{12}$.

This species, not very aptly named, arrives in the south-eastern marshy parts of England about the beginning of May, and departs in September. It frequents fresh-water ponds, marshes, and rivers, feeding on small fishes, insects, and reptiles, and is remarkable for its great agility, and peculiarly gliding flight. It is very seldom seen in any other part of England, and has not been met with in Scotland. On the Continent it is said to be plentiful in marshy places of great extent, and in America it is abundant along the Mississippi and other rivers, always preferring fresh water to the shores of the sea. The nest is placed among the herbage, and contains three or four eggs, an inch and four-twelfths in length, and similar in colouring to those of the Common and Arctic Terns. The mere shortness of the tail in this species is not enough to sanction its being placed in a separate genus.

Sterna nigra and fissipes, Linn. Syst. Nat. i. 227.—Sterna nigra, Lath. Ind. Ornith. ii. 810.—Sterna nigra, Temm. Man. d'Ornith. ii. 749.—Sterna nigra, Black-breasted Tern, MacGillivray, Brit. Birds, v.

295. Sterna minuta. Little Tern.

Bill about the same length as the head, slender, orange-yellow, with the end black, but the extreme tips yellowish-grey; feet light orange-red; wings an inch longer than the tail, which is deeply forked. Forehead white, that colour extending laterally to above each eye; upper part of head, nape, and loral spaces deep black; sides of head, fore-neck, and lower parts pure white; back and wings very pale bluish-grey; tail bluish-white, outer two quills, with the outer web and part of the inner, hoary black. Young with the forehead yellowish-white; upper part of the head and occiput brown, spotted with blackish; a black spot before the eyes, another on the ear-coverts; back and wings yellowish-brown; quills and tail-feathers tipped with yellowish-white.

Male, 9, 20, $6\frac{1}{12}$, $\frac{8}{12}$, $\frac{7}{12}$, $\frac{7}{12}$, $\frac{3}{12}$.—Female, $8\frac{1}{2}$, 19.

The Little Tern visits our shores early in May, and, although not very numerous anywhere, is met with along both the eastern and western coasts of England and Scotland. It is not very uncommon in summer on the sands from Aberdeen to Ythan, in one part of which is a breeding place, fre-

quented by about two hundred individuals. At the mouth of the Frith of Forth it is also not of rare occurrence. Its appearance on wing is very singular, it being extremely active and lively, as well as vociferous. It advances by quick beats of the wings, performed at considerable intervals, with a gliding, undulated, and most buoyant and unsteady motion, hovers like a hawk, and darts down headlong on its prey. The eggs, two or three in number, are coloured like those of the Common Tern, an inch and two-twelfths long, eleven-twelfths in breadth.

Sterna minuta, Linn. Syst. Nat. i. 228.—Sterna minuta, Lath. Ind. Ornith. ii. 809.—Sterna minuta, Temm. Man. d'Ornith. ii. 752.—Sterna minuta, Little Tern, MacGillivray, Brit. Birds, v.

GENUS CXLVII. MEGALOPTERUS. NODDY.

This genus differs from Sterna in the form of the bill, which is more slender and elongated, and especially in that of the tail, which, in place of being forked, is just the reverse, or graduated. The bill is longer than the head, slender but rather strong, compressed, very acute; upper mandible with the dorsal line nearly straight, the sides convex, the edges sharp and inflected, the tip acute; the nasal grooves extended to beyond half the length of the bill, and slightly deflected toward the edges; lower mandible with the angle very narrow, acute, the dorsal line straight, the sides convex, the edges sharp and inflected, the tip extremely acute. Mouth rather wide; tongue very slender, tapering to a horny point, grooved above; œsophagus very wide, much dilated at its lower part; stomach very small, with its muscles thin, and the epithelium dense and longitudinally rugous; intestine of moderate length, narrow; cœca very small. Nostrils submedial, linear, pervious. Eyes of moderate size. Apertures of ears moderate. Feet very short, rather stout; tibia bare for a short space; tarsus very short, roundish, with small anterior scutella; toes slender, the fourth nearly as long as the third; the anterior toes with emarginate webs; claws compressed, acute. Plumage soft, close, blended, very short on the head; wings very long, narrow, pointed; the primary quills tapering to a rounded tip; tail long, graduated, of twelve tapering, rounded feathers.

296. Megalopterus stolidus. Common Noddy.

Bill rather slender, black; plumage sooty-brown; primary quills and tail-feathers brownish-black; upper part of the head greyish-white; a black spot over the eyes.

Male, $16\frac{1}{2}$, 32, $10\frac{3}{4}$, $1\frac{3}{4}$, $\frac{9}{12}$, $1\frac{1}{4}$, $\frac{4}{12}$.

The Noddy is a native more especially of the intertropical regions, and those on their margins, very seldom making its appearance in the colder latitudes, and there only accidentally. The occurrence of an individual or two on the southern coasts of Ireland is, however, held sufficient to entitle it to the rank of a British bird.

Sterna stolida, Linn. Syst. Nat. i. 227.—Sterna stolida, Lath. Ind. Ornith. ii. 805.—Sterna stolida, Temm. Man. d'Ornith. iv. 462.—Megalopterus stolidus, Common Noddy, MacGillivray, Brit. Birds, v.

GENUS CXLVIII. GELOCHELIDON. GULL-TERN.

The Prince of Canino has separated the "Gull-billed Tern" from the rest, and referred it to a genus, Gelochelidon, of which the characters differ little from those of Sterna, the principal difference being in the bill, which approaches in form to that of the Gulls, and in the legs, which are longer than in the Terns. Bill about the length of the head, rather stout, compressed, acute; upper mandible with its dorsal line nearly straight to beyond the nostrils, then arcuato-declinate, the sides nearly erect toward the end, the edges sharp and inflected, the tip narrow and rather obtuse; the nasal groove extending to half the length of the bill; lower mandible with the angle very narrow and acute, the outline of the crura concave toward their junction, where a prominence or angle is formed, the dorsal line ascending and straight, the edges sharp and inclinate, the tip acute. Palate with three longitudinal ridges; tongue slender, tapering to an acute horny point; œsophagus very wide; stomach oblong, with the muscular coat rather thin, the tendons round, the epithelium dense, strong, prominently rugous; intestine of moderate length and width; cœca very small. Feet small; tibia bare to a considerable extent; tarsus short, compressed, anteriorly scutellate; toes small, slender, the fourth considerably shorter than the third; the anterior

connected by anteriorly concave webs; claws a little arched, compressed, very slender. Plumage soft, close, blended, very short on the fore-part of the head; wings very long, narrow, and pointed; tail of moderate length, forked, of twelve feathers.

297. Gelochelidon palustris. Marsh Gull-Tern.

Bill and feet black, hind claw straight. In winter, the forehead and top of the head white, a black crescent before the eyes, and a black spot behind them. In summer, the forehead, top of the head, occiput, and nape, deep greenish-black. Sides of the head, fore-neck, and all the lower parts white; upper parts pale greyish-blue; edges of wings whiteish; primary quills hoary on the outer web, deep grey on the inner; their shafts and those of the tail-feathers white. Young with the lower parts white, the top of the head white, spotted with grey and brown; the upper parts of the body and wings variegated with grey, brown, and yellowish; the quills greyish-brown.

Male, 14, 34, 12, $1\frac{1}{2}$, $1\frac{1}{4}$, $\frac{10}{12}$, $\frac{5}{12}$.

This species is said by M. Temminck to be abundant in Hungary and toward the borders of Turkey; while Mr Audubon has found it breeding from the mouth of the Mississippi to Connecticut. It thus frequents fresh-water lakes and rivers, rather than the sea-shores, and is said to feed on coleoptera, libellulæ, moths, and other insects, which it catches on wing. A few individuals have been met with in the south of England, from one of which Montagu discovered the species, applying to it the specific name *Anglica*, which, as M. Temminck remarks, "n'est point d'un choix heureux." The same remark applies to Sterna Cantiaca, though not in an equal degree.

Gull-billed Tern. Marsh Tern.

Sterna Anglica, Mont. Ornith. Dict. Suppl.—Sterna Anglica, Temm. Man. d'Ornith. ii. 744.—Gelochelidon palustris, Marsh Gull-Tern, MacGillivray, Brit. Birds, v.

FAMILY L. LARINÆ. LARINE BIRDS, OR GULLS.

The Sterninæ and Larinæ are connected by the genus last described, and that which comes first in order in the present family, of which the principal characters are the following:—

Body rather stout, ovate; neck of moderate length; head ovate, of moderate size. Bill generally shorter than the head, straight, compressed, rather acute, somewhat declinate at the end; upper mandible with the ridge convex, the nasal groove rather long, the edges sharp, direct, overlapping, the tip declinate; lower mandible with the angle long and very narrow, an angular projection at the commencement of the dorsal line, which is ascending and concave. Mouth of moderate width, opening to beneath the eyes; palate flat, with two prominent ridges, and four series of intervening reversed papillæ, on the anterior part five ridges; tongue emarginate and papillate at the base, fleshy, rather narrow, tapering to a narrowly rounded point, and horny beneath; œsophagus very wide; proventriculus dilated; stomach rather small, elliptical, moderately muscular, with large radiated tendons, and extremely dense, thick, longitudinally ridged epithelium; intestine rather long, narrow; cœca very small, cylindrical. Eyes rather small. Nostrils oblong or linear, reversed. Aperture of ear moderate. Legs short, or moderate; tibia bare below; tarsus rather short, somewhat compressed, with numerous much curved scutella; hind toe very small and elevated; fore toes of moderate length, slender, connected by full membranes, of which the anterior edge is a little concave, the lateral toes margined externally by a thick scaly membrane; claws small, slightly arcuate, somewhat compressed, obtuse. Plumage very full, close, elastic, soft, and blended, on the back and wings rather compact; the feathers generally oblong and rounded, on the fore part of the head short; wings very long, rather broad, pointed; tail rather short, even, or slightly rounded, of twelve broad feathers.

The Larinæ inhabit the shores of the ocean, and are represented by species in every latitude. They vary in size from that of a goose to that of a pigeon. The larger species are omnivorous, the smaller feed on fishes, crus-

tacea, insects, and worms. They are of vagrant habits, shifting from place to place according to the abundance of food. They walk well, wade into shallows, swim with ease, floating most buoyantly; have a light, wavering, moderately rapid flight, hover over the water, pat it with their feet in stooping, and with up-stretched quivering wings, pick up their food. They nestle, often in multitudes, on islands and headlands, form a bulky nest, and lay from two to five oval large eggs, of a dull colour, spotted with dusky. The young are clothed with close variegated down, and can soon walk, but generally remain near the nest until fledged, when they always differ in colour from the adult birds. The species are all closely allied, but may be divided into several genera. The number found in Britain is thirteen.

GENUS CXLIX. GAVIA. MEW.

The "Sea-Mews," or "Smaller Gulls," have a considerable affinity to the Terns. They are birds of rather small size, with the body rather light; the neck moderate, the head rather large, broadly ovate. Bill rather long or moderate, slender, much compressed, slightly decurved at the end, acute; upper mandible with the nasal sinus rather long, narrow, and feathered, the edges very thin, inclinate, the tip narow, rather acute, slightly prolonged, with a faint sinus on the margins; lower mandible very much compressed, with the intercrural space very long and extremely narrow, the commissure forming a slight angle with the dorsal line, which is nearly straight, the edges very thin, the tip rather acute. Mouth of moderate width; tongue fleshy, slender, tapering; œsophagus very wide, its walls extremely thin; stomach rather small, oblong, moderately muscular, with large tendons, and thick horny epithelium, with very prominent longitudinal rugæ; intestine of moderate length, and very narrow; cœca extremely small, cylindrical. Nostrils linear-oblong. Eyes rather small; eyelids feathered, with bare crenulate margins. Aperture of ear of moderate size. Legs of moderate length, rather slender; tibia bare for one-

third; tarsus rather short, compressed, anteriorly with numerous curved scutella; hind toe very small and elevated, the fourth a little shorter than the third; membranes anteriorly concave; claws small, slightly arched, compressed, rather acute. Plumage full, close, soft, blended, on the back and wings rather compact; wings very long, rather narrow, pointed; tail of moderate length, emarginate or even, of twelve broad, abruptly rounded feathers.

Species of this genus occur in all climates. In the colder regions they are migratory like the Terns. Five species occur in Britain. The name *Gavia* I have adopted from Brisson.

298. GAVIA ATRICILLA. BLACKISH-GREY-HEADED MEW.

Bill an inch and three-fourths in length; tarsus nearly two inches; wings three inches longer than the tail; bill and feet rich carmine; outer quill black, the next five with that colour gradually diminishing, their tips white, those of the outer two excepted. In winter, the back and wings light bluish-grey; the other parts white; the head faintly marked with brownish-grey; a black crescent before the eye, and a grey patch behind it. In summer, the colours similar, but the head and part of the neck blackish-leaden-grey, the lower parts tinged with rose-colour.

Male, 17, 40, $12\frac{3}{4}$, 2, 2, $1\frac{5}{12}$, $\frac{4}{12}$. Female, 16, 38.

This species ranks merely as an accidental straggler, a very few individuals only having been seen in the south of England. It is said to be abundant on the coasts of the Mediterranean, and, according to Mr Audubon, is plentiful in the southern parts of the United States.

Larus Atricilla, Lath. Ind. Ornith. ii. 813.—Larus Atricilla, Temm. Man. d'Ornith. ii. 779, iv. 483.—Larus Atricilla, Blackish-grey-headed Mew, MacGillivray, Brit. Birds, v.

299. GAVIA RIDIBUNDA. BROWN-HEADED MEW.

Bill an inch and a third in length; tarsus an inch and three-fourths; wings two inches and a half longer than the tail; bill and feet rich carmine; outer four quills and their coverts white, the first with the greater part of its outer margin, the tip, and a narrow band along its inner edge black; on the next five no black on the outer web, that on the tip more extended, the black band on the inner edge broader; the tips white, those of the outer two excepted. In winter, the back and wings light bluish-grey; the other parts white; the head

faintly marked with grey; a black crescent before the eye, and a blackish-grey patch behind it. In summer, the colours similar, but the head and throat deep brown, becoming brownish-black behind, the lower parts slightly tinged with rose-colour. Young with the bill flesh-coloured, toward the end blackish-brown, feet brownish flesh-colour; head and nape pale brown; upper parts brown, the feathers edged with paler; tail white, with a broad terminal bar of dark brown.

Male, 16, 38, 17½, 1 4/12, 1 8/12, 1 4/12, 4/12. Female, 15, 36.

This species is generally found dispersed along the shores, but often congregates, more especially in estuaries and near the mouths of rivers, during the cold season, when its food consists of small fishes, which it picks from the water, as well as crustacea, and marine worms which it finds along the shores. Frequently, however, it makes incursions inland, searching the pastures and ploughed fields for worms and larvæ, especially in stormy weather. Its flight is very light, buoyant, and wavering. Even when solitary, it emits a creeking cry at intervals, but when multitudes are assembled, it becomes clamorous, their cries filling the air. In spring they betake themselves to particular marshes or lakes, on the tufts, or along the shores of which, they form their nests, which are composed of rushes and sedges, laying two or three, very rarely four eggs, of an olivaceous, oil-green, or light-brown colour, spotted and blotched with brownish-black and purplish-grey; their length averaging two inches and two-twelfths, their breadth an inch and a quarter. As the eggs afford delicate eating, they are collected for sale. When the young are able to fly, they and their parents betake themselves to the sea-coasts.

Black-headed Gull. Black-cap Gull. Hooded Maw. Red-legged Gull. Pewit Gull. Mire Crow. Sea Crow. Pick-mire. Pictarn. Laughing Gull.

Larus ridibundus, Linn. Syst. Nat. i. 225; Larus cinerarius, i, 224: summer and winter.—Larus ridibundus, Lath. Ind. Ornith. ii. 811.—Larus ridibundus, Temm. Man. d'Ornith. ii. 780.—Gavia ridibunda, Brown-headed Mew, MacGillivray, Brit. Birds, v.

300. Gavia Sabini. Sabine's Mew.

Bill an inch in length; tarsus an inch and a half; wings two inches longer than the tail, which is forked; bill black to a little before the nostrils, then yellow; outer four quills black, with the tips, and inner half of the inner web to near the end, white. In summer, the head and upper part of neck

all round blackish-grey, becoming deep black behind; the back and wings bluish-grey; the other parts white. Young with the head spotted with blackish-grey and white; the back and wings blackish-grey and yellowish-brown; tail white, with a black band at the end.

Male, 13, 33, $10\frac{3}{4}$, 1, $1\frac{6}{12}$, 1, $\frac{3}{12}$. Female, $12\frac{1}{2}$, 32.

This beautiful species, which breeds along the coasts of the arctic seas of America, and extends in winter as far southward as New England, has been met with in a few instances in England, and on the coasts of the continent.

Larus Sabini, Leach. Ross, Voy. App. Pl. 7.—Larus Sabinei, Temm. Man. d'Ornith. iv. 488.—Favia Sabini, Sabine's Mew, MacGillivray, Brit. Birds, v.

301. Gavia minuta. Little Mew.

"Length of the tarsus an inch; shafts of the quills brown; all the feathers of the wings tipped with pure white; the legs when stretched out reach only about three-fourths of the length of the tail; the hind toe very small, bearing a scarcely apparent straight claw. Length about eleven inches. Adult in winter with the forehead, space between the eye and bill, a large spot behind the eyes, throat, all the other lower parts, and the tail, pure white; occiput, nape, a spot before the eyes, another over the ears, blackish-grey; all the other upper parts light bluish-grey; all the feathers of the wings of that colour terminated by a large space of pure white; lower surface of the wings blackish; bill and iris blackish-brown; feet very bright vermillion; the wings longer than the tail by an inch. In summer, the head and upper part of the neck black, a white crescent before the eyes, lower parts roseate-white; rump and tail white; the rest of the upper parts very pale pure bluish-grey; the primaries grey, and, with the secondaries, tipped with white; bill deep lake-red, iris dark-brown, feet crimson-red. Young with the forehead, sides of the head, all the lower parts, and the tail, white; upper parts variegated with brown and grey; the tail slightly forked, with a broad terminal band of black; bill blackish-brown, feet livid flesh-colour." Temminck.

The above description is taken from M. Temminck, as I am not acquainted with this species, of which a few individuals, in the immature state, have been met with in England, Scotland, and Ireland. It is said to occur in the Mediterranean at all seasons, and to extend even to Greenland, but to be of rare occurrence on the coasts of western Europe.

Larus minutus, Lath. Ind. Ornith. ii. 813.—Larus minutu[illegible],

Temm. Man. d'Ornith. ii. 787.—Gavia minuta, Little Mew, MacGillivray, Brit. Birds, v.

GENUS L. LARUS. GULL.

The Gulls, properly so called, are much larger than the Mews, and distinguished from them by their stouter bill, of which the prominence at the junction of the crura of the lower mandible is more conspicuous. Upper mandible with the dorsal line straight for half its length, then arcuato-decurvate, the nasal sinuses rather short, wide, and feathered, the nostrils medio-basal, linear-oblong, wider anteriorly, covered above and behind with a sloping thin-edged plate, the edges very thin, direct, the tip narrow, obtuse, a little prolonged; lower mandible narrower, much compressed, with the intercrural space very long and extremely narrow, the commissure forming a prominent angle with the dorsal line, which is ascending and somewhat concave, the edges very thin; the tip narrow, but obtuse. Mouth of moderate width, opening to beneath the eyes; tongue fleshy, rather narrow, deeply channelled above, tapering to a narrowly rounded point; œsophagus very wide throughout, its walls thin; stomach rather small, elliptical, muscular, with large radiated tendons, and extremely dense thick epithelium, marked with strong longitudinal ridges; intestine rather long and narrow; cœca very small, narrow, cylindrical. Eyes rather small, eyelids feathered, with bare crenulate margins. Legs of moderate length, slender; tibia bare for a short space; tarsus rather short, somewhat compressed, with numerous much curved scutella; hind toe very small and elevated; fore toes of moderate length, slender, the fourth a little shorter than the third, all scutellate, and connected by reticulated membranes, having their margin a little concave; claws small, slightly arcuate, somewhat compressed, toward the end depressed, obtuse. Plumage very full, close, soft, and blended; on the back and wings somewhat compact; wings very long, rather broad, pointed; the primaries nearly straight, tapering, obtuse, the first and second longest; tail rather short, even, or slightly rounded, of twelve broad feathers.

The Gulls are scarcely well separated from the Mews. Species of the genus occur in all climates, from the arctic to

the antarctic ice. They are vagrant, voracious birds, which feed essentially upon fish, living or dead, but also on crustacea, radiata, worms, insects, and carcasses of all kinds. It is chiefly along the shores that they search for food, but they are often seen far out at sea, and in stormy weather far inland. They generally breed in flocks, form a large nest, and lay two or three large oval eggs, greyish or brownish, spotted and blotched with brown and grey. The young, covered with close particoloured down, soon leave the nest, and conceal themselves in crevices or behind stones. The plumage is at first mottled with brown or dusky. In the adult the predominant tints are pure white, pale greyish-blue, or deep slate-purple.

302. Larus marinus. Great Black-backed Gull.

Bill two inches and two-thirds along the ridge, which is much decurved toward the end, one inch high at the angle, which is prominent; tarsus three inches long; wings slightly surpassing the tail. In winter, the bill light-yellow, the lower mandible with an orange-red patch toward the end; margins of eyelids red; feet flesh-coloured; back and wings greyish-black tinged with purple, or dark slate-coloured, quills largely tipped with white; head and hind-neck white, with light-brown streaks; all the other parts pure white. In summer the bill pure yellow, the patch on the lower mandible bright carmine, as are the edges of the eyelids; the head and neck pure white. Young with the bill brownish-black, the head and neck greyish-white, streaked with brown; the upper parts mottled with brownish-black, greyish-brown, and white; the lower greyish-white, barred and spotted with brown.

Male, 29, 64, 19½, 2 $\frac{9}{12}$, 2 $\frac{11}{12}$, 2 $\frac{4}{12}$, $\frac{6}{12}$. Female, 27, 60.

This species is generally dispersed along our coasts, as well as those of the continent and of North America. It is vigilant, shy, and suspicious; has a strong, sedate flight; often soars and sails like the Eagles; swims with ease, and floats most buoyantly. It emits various cries, some loud and clear, others like the sounds of laughter. It feeds on almost every sort of animal matter, and is very voracious. On the coasts of England it has few breeding places, but on the islets of the north and west of Scotland, great numbers annually settle. The nest is generally made in a cavity in the turf, or in a crevice, and is composed of various dry plants; the eggs, two or three, are three inches long, two inches and a

twelfth broad, pale yellowish or greenish-grey, spotted and blotched with blackish-brown, umber, and pale purplish-grey.

Cobb. Farspach.

Larus marinus, Linn. Syst. Nat. i. 225.—Larus marinus, Lath. Ind. Ornith. ii. 813.—Larus marinus, Temm. Man. d'Ornith. ii. 760.—Larus marinus, Great Black-backed Gull, MacGillivray, Brit. Birds, v.

303. Larus flavipes. Yellow-footed Gull.

Bill two inches along the ridge, eight-twelfths high at the commissure, which is moderately prominent; tarsus two inches and a half long; wings about two inches longer than the tail; tarsi and toes yellow. In winter, the bill greenish-yellow, the lower mandible with an orange-red patch toward the end; the margins of the eyelids light vermilion; the back and wings blackish-grey tinged with purple, or dark slate-coloured, the quills tipped with white; the head and hind-neck white, with light brown streaks; all the other parts pure white. In summer, the bill light orange, the patch on the lower mandible vermilion or orpiment tinged with carmine, as are the edges of the eyelids; the head and neck pure white. Young with the bill dusky, the head and neck greyish-white, streaked with brown; the upper parts mottled with blackish-brown, greyish-brown and white; the lower greyish-white, barred and spotted with brown.

Male, 22½, 55, 17½, 2 1⅜, 2½, 1 1½, ½, Female, 21, 54.

This species is generally dispersed along our coasts, and permanently resident, but more numerous in the northern than in the southern parts. It breeds on unfrequented islands, headlands, and sometimes islets in lakes. The nest is large, and generally contains three eggs, usually yellowish-brown, light brown, or olivaceous, with spots and patches of purplish-grey and dark brown. Its flight is peculiarly elegant, more easy and buoyant than that of the last species, with the wings more curved. Its common cry is a clear chuckling sound, like laughter, and it also emits a loud, mellow, and plaintive note. It feeds on small fishes, crustacea, echini, mollusca, and worms, but also eats stranded fishes. Unless when pursuing a shoal of fishes, individuals of this species generally keep by themselves. In winter many advance southward, but some remain even in the most northern parts.

Lesser Black-backed Gull.

Larus fuscus, Linn Syst. Nat. i. 225.—Larus fuscus, Lath. Ind. Ornith. ii. 815.—Larus fuscus, Temm. Man. d'Ornith. ii. 767.; Larus flavipes, iv. 471.—Larus flavipes, Yellow-footed Gull, MacGillivray, Brit. Birds, v.

304. Larus argentatus. Silvery Gull.

Bill two inches and a fourth along the ridge, which is much decurved toward the end, nine-twelfths high at the angle, which is prominent; tarsus two inches and a half long; wings surpassing the tail by an inch and a half. In winter, the bill yellow, the lower mandible with an orange-red patch toward the end; the margins of the eyelids yellow; the feet flesh-coloured; the back and wings light bluish-grey, very slightly tinged with purple; the quills largely tipped with white, the outer six in part black, two of them with a large white spot toward the end; the head and hind-neck white, with light brown streaks; all the other parts pure white. In summer, the bill pure yellow, the patch on the lower mandible bright orange, inclining to carmine, margins of eyelids yellow; head and neck pure white; the other parts as in winter. Young with the bill brownish-black, paler at the base of the lower mandible; edges of eyelids dusky; feet purplish flesh-colour; head and neck greyish-white, streaked with greyish-brown; lower parts greyish-white, spotted with greyish-brown; upper parts variegated with dark greyish-brown and brownish-white, the feathers being margined with the latter; the quills greyish-black, as is the tail, unless at the base, where it is barred with white.

Male, 23, 54, 18, $2\frac{1}{2}$, $2\frac{1}{2}$, $2\frac{3}{12}$, $\frac{4}{12}$. Female, 22, 52.

The Silvery, or Herring Gull, as it is also called, is considerably larger than the Yellow-footed Gull, and is by far the most numerous of our larger Gulls. Its flight is strong, buoyant, direct, and unwavering, when it is proceeding toward a distant place. When engaged with a shoal of fry, it hovers over the water, stretches upwards and vibrates its wings, lets down its feet so as to touch and sometimes pat the water, and picks up its prey without alighting. Its cry is loud and shrill on such occasions, but at other times resembles the sound of laughter. During tempestuous weather it often flies inland. It breeds, usually in great numbers, in small unfrequented islands, or on remote rocky coasts, forming a bulky nest, and laying usually three eggs, averaging two inches and three-fourths in length, an inch and eight-twelfths in breadth, of various tints of grey or olivaceous-brown clouded or spotted with dark-brown and purplish-grey.

Herring Gull.

Larus argentatus, Gmel. Syst. Nat. i. 600.—Larus marinus, var. B. Lath. Ind. Ornith. ii. 814.—Larus argentatus, Temm. Man. d'Ornith. ii. 764.—Larus argentatus, Silvery Gull, MacGillivray, Brit. Birds, v.

305. Larus glaucus. Glaucous Gull.

Bill two inches and three-fourths along the ridge, which is moderately decurved toward the end, ten-twelfths high at the angle, which is prominent; tarsus three inches long; wings about an inch shorter than the tail; total length from twenty-six to thirty-two inches. In winter, the bill wine-yellow, the lower mandible with an orpiment-red patch toward the end; the margins of the eyelids straw-yellow; the feet flesh-coloured; the back and wings light bluish-grey; the quills all white at the end; the head and neck white, streaked with very pale brown; all the other parts pure white. In summer, the bill gamboge-yellow, the patch on the lower mandible carmine, as are the edges of the eyelids; the head and neck pure white; the other parts as in winter. Young with the bill brownish-black toward the end, at the base greyish-yellow, the feet flesh-coloured; the general ground-colour of the plumage pale yellowish-grey; the head and neck longitudinally streaked with very pale brown; the upper parts with transverse irregular bands, the lower confusedly mottled and barred with pale brown and yellowish-white; the quills greyish-white, irregularly marked with pale brown; the tail pale grey, spotted and barred with pale brown.

Male, 30, 62, 19½, 2⅝, 3, 2⅞, 1⅝. Female, 28, 60.

In summer dispersed over the arctic seas, in winter advancing into the temperate regions. Dr Lawrence Edmondston first introduced it to notice as a British bird, having obtained young individuals in Shetland in 1809, 1814, and up to 1821, when he proposed naming it Larus islandicus. In March 1821, he described an adult bird. I have seen it in the Hebrides and the Frith of Forth, and it has been observed on various parts of the coast of England. It has not been found breeding with us. The eggs are broadly oval, pale yellowish-grey, dotted and spotted with dark brown, and blotched with pale purplish-grey.

Burgomaster. Iceland Gull.

Larus glaucus, Brunnich, Gmelin, Latham?—Larus glaucus, Tem. Man. d'Ornith. ii. 757.—Iceland Gull, Edmondston, Mem. Wern. Soc. iv. 176, 182.—Larus glacialis, MacGillivray, Mem. Wern. Soc. v. 270.—Larus glaucus, Glaucous Gull, Macgillivray, Brit. Birds, v.

306. Larus leucopterus. White-winged Gull.

Bill nearly two inches along the ridge, which is moderately decurved toward the end, eight-twelfths high at the angle, which is little prominent; tarsus two inches and a half long;

wings a little longer than the tail; total length from twenty to twenty-five inches. In winter, the bill wine-yellow, the lower mandible with an orpiment-red patch, the margins of the eyelids yellow; the feet flesh-coloured; the back and wings light bluish-grey; quills all white at the end; head and neck white, streaked with very pale brown; all the other parts pure white. In summer, the bill gamboge-yellow, the patch on the lower mandible orange-red, as are the edges of the eyelids; the head and neck pure white, the other parts as in winter. Young with the bill brownish-black toward the end, at the base pale flesh-coloured; the general ground-colour of the plumage pale yellowish-grey; the head and neck longitudinally streaked with very pale brown; the upper parts with transverse irregular bands; the lower confusedly mottled and barred with pale brown and yellowish-white; the quills greyish-white, irregularly marked with pale brown; the tail greyish-white, spotted and barred with pale brown.

Male, 24, 50, 17½, 1¾, 2½, 2⅜, 2 $\frac{5}{12}$.

Dr Edmondston, who first observed this species in Britain, described it in March 1823, proposing for it the name of Larus islandicus, which he had previously given to Larus glaucus. With us it is only a winter visitant, its summer haunts being in the Arctic regions.

Iceland Gull.

Larus islandicus, Edmondston, Mem. Wern. Soc. iv. 506.—Larus arcticus, MacGillivray, Mem. Wern. Soc. v. 268.—Larus leucopterus, Temm. Man. d'Ornith. iv. 467.—Larus leucopterus, White-winged Gull, MacGillivray, Brit. Birds, v.

307. Larus canus. Green-billed Gull.

Bill an inch and a half along the ridge, which is gently decurved toward the end, five-twelfths high at the angle, which is little prominent; tarsus two inches long; wings surpassing the tail by two inches. In winter, the bill greyish-green shaded into ochre-yellow at the end; margins of eyelids brown; feet deep greenish-grey; back and wings light bluish-grey; the quills largely tipped with white, the outer five in part black, two of them with a large white spot toward the end; head and hind-neck white, with brownish-grey streaks and spots; all the other parts pure white. In summer, the bill greenish-yellow, margins of eyelids vermilion; head and neck pure white, the other parts as in winter. Young with the bill brownish-black, flesh-coloured at the base; edges of eyelids dusky; feet purplish flesh-colour;

head and neck greyish-white streaked with greyish-brown; lower parts white, spotted with brown; upper parts variegated with greyish-brown and brownish-white, the feathers being margined with the latter; quills brownish-black, tail white, with a broad band of black at the end.

Male, 18, 39, 14¾, 1 7/12, 2, 1½, 4/12. Female, 17.

This very common, lively, and beautiful species, although much inferior in size to Larus argentatus, is nearly allied to it in form and colouring. It is permanently resident in Britain, common along the shores of the continent, but has not been observed in America. Large flocks often traverse the interior in winter and spring. In the breeding-season, they are found dispersed along the shores of England and Scotland, much more abundantly in the northern parts of the latter country, and in the Orkney and Shetland Islands, and Hebrides. The nests are rather bulky, and contain two or three broadly oval eggs, two inches and two-twelfths long, an inch and a half in breadth, of various tints of brown or greenish-grey, dotted and spotted with dark brown and purplish-grey. They afford delicate eating, like those of all the other gulls. The species feeds on small fishes, which are picked from the water as the bird hovers over it, stranded fishes, asteriæ, mollusca, shrimps, earth-worms, larvæ, and insects, sometimes grain.

Common Sea Maw, Mew, or Mall. Winter Gull.

Larus canus, Linn. Syst. Nat. i. 224.—Larus canus, Lath. Ind. Ornith. ii. 815.—Larus canus, Temm. Man. d'Ornith. ii. 771.—Larus canus, Green-billed Gull, MacGillivray, Brit. Birds, v.

GENUS CLI. RISSA. KITTIWAKE.

The Kittiwake, so common on our rocky coasts, seems to me to differ sufficiently in the form of its bill and feet from the other Gulls, independently of its having merely a rudimentary hind toe, to entitle it to generic distinction. The body is of moderate size, the neck stout and of ordinary length, the head rather large, ovato-oblong. Bill rather short, moderately stout, compressed, nearly straight; upper mandible with the dorsal line very slightly convex at first, then arcuato-declinate, the ridge convex, gradually narrowed, the nasal sinuses rather short, wide, and feathered, the nostrils sub-medial, linear-oblong, wider anteriorly, covered

above and behind with a sloping, convex, thin-edged plate, the sides beyond the nostrils erect and flattened, the edges thin, direct, the tip narrow, rather acute, very slightly prolonged; lower mandible narrower, compressed, with the intercrural space long and narrow, the lower outline of the crura slightly concave, forming a slight prominence at the commissure, the dorsal line distinctly concave and scarcely ascending, the edges thin and inflected, the tip compressed and rather acute; the gape-line commencing beneath the eyes. Tongue and digestive organs as in the Gulls and Mews. Legs very short; tibia bare to a moderate extent; tarsus very short, considerably compressed, with anterior decurved scutella; hind toe extremely diminutive, with a minute claw, which is obsolete in old individuals; anterior toes of moderate length, the shortest as long as the tarsus; webs entire, slightly emarginate; claws rather small, compressed, moderately arched, rather acute. Plumage full, close, soft; wings very long, rather narrow, pointed; tail of moderate length, even, of twelve feathers.

Only one species is known. The genus is intermediate between Larus and Cetosparactes. As in the latter, the young are spotted with black, but only on the back and wings.

308. Rissa tridactyla. Kittiwake.

Bill about an inch and a half in length, five-twelfths high at the knob; tarsus an inch and a quarter long. In winter, the bill pale greenish-yellow; feet black; back and wings light bluish-grey; tips of five outer primaries and outer web of first black; the rest of the plumage pure white, except the hind part of the neck and the occiput, which are pale bluish-grey. In summer, the head and neck pure white, the other parts as in winter. Young with the bill black, the feet greenish-grey, forehead and lower parts white, a narrow black crescent before the eyes, a dark grey patch over the ears, the occiput tinged with grey, a dusky patch on the nape; the back deep greyish-blue; the feathers margining the wing and those along the humerus black; scapulars and secondaries with a black patch; tail white, with a broad black band, not including the outer web of the outer feather.

Male, 17, 36, $12\frac{1}{2}$, $1\frac{1}{2}$, $1\frac{1}{4}$, $1\frac{7}{12}$, $\frac{5}{12}$. Female, $16\frac{1}{2}$, 35.

The Kittiwakes arrive along our coasts in the end of April,

and disappear in October. They nestle in vast numbers on high maritime cliffs, generally such as are frequented by auks, guillemots, and other sea-birds. These breeding-places are much more numerous in Scotland than in England. The nests, which are generally placed on the lower parts of the cliffs, are bulky, formed of grass and sea-weeds, and contain two or three eggs, of a broadly oval form, two inches and a twelfth in length, an inch and a half in breadth, pale yellowish-grey, greenish-white, or light olive-green, spotted and dotted all over with dark-brown and pale purplish-grey. The cry of this bird is clear and rather sharp, resembling the syllables *Kittiāa*, or *Kittiweea*. It feeds on small fishes, which it picks from the water, hovering with elevated wings, as well as occasionally crustacea and small shellfish. It walks little, and not with ease, owing to the shortness of its legs; but has an easy and buoyant flight.

Annet. Tarrock.

Larus Rissa, and tridactylus, Linn. Syst. Nat. i. 224.—Larus tridactylus, Lath. Ind. Ornith. ii. 817.—Larus tridactylus, Temm. Man. d'Ornith. ii. 274.—Rissa tridactyla, Kittiwake, MacGillivray, Brit. Birds, v.

GENUS CLII. CETOSPARACTES. WHALE-BIRD.

The "Ivory Gull" is the only known species of this genus, which is distinguished by the short robust bill, very short rough tarsi, and crenated interdigital membranes. Body moderate; neck of ordinary length; head rather large, ovato-oblong, anteriorly narrowed. Bill shortish, robust, compressed, straight; upper mandible with the dorsal line somewhat concave at first, then arcuato-declinate, the ridge broadly convex, the lateral sinus rather short, wide, and feathered; the nostrils medio-basal, linear-oblong, wider anteriorly, covered above and behind with a sloping, thin-edged plate, the edges thin, direct, the tip obtuse, very slightly prolonged; lower mandible narrower, compressed, with the intercrural space rather long and narrow, the lower outline of the crura straight, forming a very slight prominence at the commissure, the dorsal line ascending and almost straight, the edges thin and somewhat inflected, the tip narrow, rather obtuse; the gape-line commencing beneath the eyes. Legs very short; tibia bare to a small extent; tarsus very short, little compressed, covered anteriorly with

nearly straight scutella, laterally and behind with very small prominent scales; hind toe very small, little elevated, with a stout decurved claw; fore toes short, longer than the tarsus; membranes emarginate, strongly crenulate, the outer with a sinus; claws moderate, strong, well-curved, rather acute. Plumage very full, close, soft; wings very long, rather broad, pointed; the outer two primaries with a sinus on the inner web near the obtuse tip; tail of moderate length, a little rounded, of twelve broad feathers.

309. CETOSPARACTES EBURNEUS. IVORY WHALE-BIRD.

Bill stout, an inch and a third in length, half an inch high at the knob; tarsus rough behind, an inch and a half long. Adult with the bill greenish-grey, yellow tinged with red beyond the nostrils; feet black; plumage white, slightly tinged with yellow. Young with the bill dusky, pale yellow at the end; feet black; plumage white, variegated with brownish-black, each feather having a large round spot toward the end; forehead and loral spaces bluish-grey.

Male, 20, 42, $14\frac{1}{4}$, $1\frac{4}{12}$, $1\frac{5}{12}$, $1\frac{3}{12}$, $\frac{6}{12}$.

This bird inhabits the Arctic regions of both continents, and in particular the coasts of Spitzbergen and Greenland, on the cliffs of which it breeds. It is said to be less shy than gulls generally are, being nearly as fearless as the Fulmar, with which it associates while feeding on dead whales; to have a strong and harsh voice; and, unless when engaged in breeding, to be usually met with on the open sea. Very few instances of its visiting Britain have been recorded. The first of these came under the observation of Dr Lawrence Edmondston, who, in the fourth volume of the Memoirs of the Wernerian Society, has described a young individual shot in Balta Sound, Shetland, on the 13th December 1822. It has also been shot in the Frith of Clyde and on the west coast of Ireland.

Ivory Gull. White Gull. Senator.

Larus eburneus, Gmel. Syst. Nat. i. 596.—Larus eburneus, Lath. Ind. Ornith. ii. 816.—Larus eburneus, Temm. Man. d'Ornith. ii. 769, iii. 474. Cetosparactes eburneus, Ivory Whale-bird, MacGillivray, Brit. Birds, v.

GENUS CLIII. RHODOSTĒTHIA. ROSY-GULL.

A small gull, singular from the cuneated form of its tail, and remarkable in other respects, has, not improperly, I

think, been generically distinguished, and most deservedly named after Captain James Ross, who has contributed so much to our knowledge of the natural productions of those desolate regions of the north-west, among which it has been his fate to sojourn. But as the generic name *Rossia*, which the Prince of Canino has proposed for it, has been given by Mr Owen to a Cephalopodous Molluscum, I prefer that of Rhodostethia. Body moderate; neck rather short; head ovate. Bill short, rather slender; upper mandible with the dorsal line straight for half its length, arcuato-decurvate toward the end; lower mandible with the intercrural space narrow, the knob slight, the dorsal line concave, the tip narrow. Legs short; tibia bare for a very short space; tarsus rather stout, anteriorly scutellate, rough behind; first toe short, with a large curved claw; anterior toes moderate, with the webs entire; claws rather large, arched, compressed, acute. Plumage soft and full; wings long, rather narrow, pointed; tail cuneate, of twelve feathers, of which the central are much longer than the lateral. Only one species is known.

310. Rhodostethia Rossi. Ross's Rosy-Gull.

Wings longer than the tail; middle tail-feathers exceeding the lateral by about an inch. In summer, the bill black, margins of eyelids reddish-orange; feet vermilion; fore-part of back, and both surfaces of wings, pale bluish-grey; outer web of first quill blackish-brown; a narrow ring on the neck, and some feathers near the eyes, brownish-black; the rest of the plumage white, but all the lower parts richly tinged with rose-colour.

Adult, $13\frac{1}{2}$, 30, $10\frac{1}{2}$, $\frac{3}{4}$, $1\frac{2}{12}$, $\frac{10}{12}$, $\frac{3}{12}$.

This species was first alluded to by myself under the temporary name of Larus roseus; then described and figured by Sir William Jardine under the same name. Dr Richardson named it Larus Rossii, Cuneate-tailed Gull, which was its first true name, he having been commissioned to describe it. I have seen some angry remarks about "subalterns" in museums naming objects without being authorized; but I have no opportunity at present of referring to them, and would only remark that these same subalterns have sometimes had the task of affording essential aid to authors, without so much as

thanks in return. The petty squabbles of "namers" are about as amusingly disgusting as the selfish greed of some collectors of plants, who rush to the first tuft of "a rare species" they see, and sweep it off "in toto," to the unheeded mortification of their unsuspecting companions. This species has once occurred in Ireland.

Larus Rossii, Richardson, Parry's Second Voyage, App. 359; Fauna Bor. Amer. ii. 427.—Larus rosea, Jardine and Selby, Ornith. Illustr. vol. i. pl. 14.

GENUS CLIV. CATARACTES. PIRATE-BIRD.

The birds of which this genus is composed are very nearly allied to the Gulls in their conformation, as well as in many of their habits; but differ in having a more bold and predatory character, and in living for the most part, like gentlemen, at the expense of the "working classes," the Gulls and Terns, which they force to pay tithes or tribute, causing them to disgorge part of their food, which they immediately transfer to their own gullets. Linnæus considered them as part of his comprehensive genus Larus; Illiger and Temminck refer them to a separate genus, which they name Lestris; and others have elevated one species, the largest, to the peerage, under the title of Cataractes Skua, leaving the rest in the genus Lestris, as common robbers. I am not sure that the larger bird is altogether entitled to this distinction.

Cataractes, then, so named by some of the older as well as modern authors, has the body of a compact and robust form; the neck of moderate length; the head large, broadly ovate, anteriorly narrowed. Bill shorter than the head, nearly as broad as high at the base, compressed toward the end, straight, with the tip decurved; upper mandible cerate, with the ridge broad and rounded, having a shallow groove on each side, the nasal space covered by a thin plate; nostrils linear-oblong, much wider anteriorly, pervious, sinus very short, broad, and feathered, edges sharp and inflected, tip very strong, laterally convex, much decurved, thin-edged, rather obtuse; lower mandible with the intercrural space long and narrow, the branches broad and erect, the angle little prominent, the edges sharp and inflected, the tip com-

pressed, obtuse, thin-edged. Mouth and digestive organs nearly as in Larus. Tongue broadly channelled above, contracted and induplicate toward the end; œsophagus very wide; stomach small, moderately muscular, with dense, rugous epithelium; intestine rather short and wide; cœca rather long. Eyes rather small; eyelids feathered, with a bare crenulate margin. Feet of moderate length, rather stout; tibia bare below; tarsus moderately compressed, with anterior decurved scutella, the lateral and posterior scales convex so as to be rough to the touch; hind toe elevated, very small, with a rather large, arcuate, acute claw; anterior toes rather long; membranes entire; claws much curved, compressed, acute. Plumage full, close, firm, on the back and wings compact; wings very long, rather broad, pointed; tail of moderate length, of twelve rather broad, abruptly rounded feathers, of which the two middle are considerably longer than the rest.

311. Cataractes Skua. Brown or Skua Pirate-Bird.

Bill two inches and a quarter in length, tarsus two inches and a half; middle tail-feathers scarcely an inch longer than the rest, broad and rounded. Bill and feet black; feathers of the neck acuminate; the general colour of the upper parts dark greyish-brown, streaked with brownish-yellow; primary quills brownish-black, with their shafts and basal parts white, there being a conspicuous patch of that colour on the wing; tail blackish-brown, white at the base, but that colour not apparent there.

Male, 22, 52, 15, $2\frac{1}{4}$, $2\frac{1}{2}$, $2\frac{3}{12}$, $\frac{5}{12}$.

The Skua, or Bonxie, as the Shetlanders call him, is seldom met with on the coasts of England, or even of Scotland. Considered with reference to his British territories, he appears to be limited almost to the Shetland islands, of three or four hill-tops of which he has taken special possession. According to the accounts of Mr Low, Dr Neill, Captain Vetch, and Dr Edmondston, he is the boldest of all birds, attacking with great fury any person, however armed, that approaches his haunts in the breeding-season. His manner of walking, swimming, and flying, is similar to that of the Gulls, but more vigorous; his voice a sharp and shrill cry, like that of a young gull. He feeds on fishes, and occasionally young birds, but obtains a great part of his subsistence by harassing the larger gulls until he forces them to disgorge part of

the contents of their gullet. The nest is made among the grass, and the eggs, generally two, sometimes three, are olive-brown, spotted with dusky. In Foula, it was formerly protected, on account of the benefit it conferred by driving off eagles and ravens; but of late years, the rapacity of bird-collectors has greatly thinned its numbers in Shetland. It is easily tamed, becomes familiar, and even shews some affection toward its feeder.

Skua. Bonxie.

Larus Catarractes, Linn. Syst. Nat. i. 226.—Larus Catarractes, Lath. Ind. Ornith. ii. 818.—Lestris Catarractes, Temm. Man. d'Ornith. ii. 729, iii. 494.—Cataractes Skua, Brown Pirate-bird, MacGillivray, Brit. Birds, v.

312. CATARACTES POMARINUS. POMARINE PIRATE-BIRD.

Bill an inch and three-fourths in length, tarsus two inches, very rough behind; middle tail-feathers broad, rounded, twisted to a side at the end, an inch longer than the next; bill dull-green, dusky toward the end; tibia, toes, webs, and lower half of tarsus black, the upper half light-blue. Upper part and sides of head brownish-black; upper neck all round yellowish-white, lower white barred with brownish-black; breast white; sides, abdomen, and lower and upper tail-coverts, white barred with black; back and wings brownish-black; quills and tail-feathers white at the base; lower wing-coverts barred with white and dusky. Young with the bill greenish-blue, at the end black; feet greyish-blue; toes and webs whitish at the base, dusky at the end; head and neck dull brown, the feathers margined with paler; upper parts dark brown, with reddish semilunar bands; lower parts greyish-brown, spotted and undulated with light red; middle of abdomen, upper and lower tail-coverts, barred with dusky and reddish.

Male, 20, 48, 14, $1\frac{9}{12}$, $2\frac{1}{12}$, $1\frac{11}{12}$, $\frac{8}{12}$.

This species, which breeds in the Arctic regions, and appears to be more plentiful in America than in Europe, is seldom or never seen on our coasts in the adult state, although young individuals are not extremely rare in winter, and may generally be observed wherever gulls are collected in pursuit of herrings or shoals of other fishes. I have seen it thus in the Frith of Forth, and it has been met with as far as the southern coasts of England.

Great variations are observed in the colours of the plumage, which have not yet been referred to any determinate rule.

Lestris pomarinus, Temm. Man. d'Ornith. ii. 793, iv. 495. Cataractes pomarinus, Pomarine Pirate, MacGillivray, Brit. Birds, v.

313. Cataractes Richardsonii. Richardson's Pirate-Bird.

Bill an inch and a third in length, greyish-black, tinged with blue above; tarsus an inch and two-thirds, feet black; middle tail-feathers three inches longer than the rest, broad, tapering moderately until near the end, when they rapidly narrow to a fine point. Male in summer with the upper part of the head blackish-brown; the nape and upper sides of the neck yellowish-white; all the upper parts blackish-brown, the quills darker, the primaries with the shafts white; anterior part of the forehead, the cheeks, throat, and lower part of the body white, the fore-neck tinged with brown, the lower wing-coverts and tail-coverts dark greyish-brown. Female similar to the male. Individuals of both sexes vary in the extent of white on the neck and breast, some being brown all over. Young with the bill light blue, dusky at the end; tarsi and basal part of the feet light blue, the rest black; plumage sooty-brown, lighter beneath; feathers of the upper parts margined with whitish; lower parts transversely undulated with pale greyish-yellow.

Male, 21, 42, 13, $1\frac{4}{12}$, $1\frac{8}{12}$, $1\frac{5}{12}$, $\frac{4}{12}$. Female, 19, 40.

This active and predatory bird leads a wandering life, seldom remaning long in one place, unless during the breeding season. Its flight is rapid, gliding, and steady, when it is proceeding to a distance, but it turns, winds, sails, or shoots along, with extreme dexterity on occasion, and is thus enabled to harass Mews and Terns while fishing, and to force them to drop or disgorge part of their food, which it catches on wing. In autumn it is frequently seen in our estuaries, but in summer betakes itself chiefly to the northern coasts and islands, where it breeds, generally in societies. The nest is like that of a gull, and placed on the ground, usually in a marshy place. The eggs are two or three, ovato-pyriform, ovate, or oblong, olivaceous, or of various shades of brown, spotted and patched with umber-brown, and purplish-grey, their length averaging two inches and a quarter.

Arctic Gull. Man-of-war Bird. Boatswain. Teaser. Dung Bird. Dung Hunter. Dirty Allen. Scote-Allen. Allen. Scull. Badock.

Lestris Richardsonii, Temm. Man. d'Ornith. iv. 499.—Cataractes Richardsonii, Richardson's Pirate-bird, MacGillivray, Brit. Birds, v.

314. Cataractes longecaudatus. Long-tailed Pirate-Bird.

Bill an inch and a fourth in length, greyish-black tinged with blue above; tarsus an inch and a half, partly yellow, feet black; middle tail-feathers from six to eight inches longer than the rest, gradually tapering to a narrow point. Male in summer with the upper part of the head blackish-brown; the neck yellowish-white, the lower parts white; lower part of hind-neck, and all the upper parts, blackish-grey; quills brownish-black, with the shafts white. Female similar, but with the middle tail-feathers much shorter. Young with the bill light-blue, dusky at the end, yellowish at the base; tarsi and basal part of the feet dull yellow; plumage sooty-brown, lighter beneath; feathers of the upper parts bordered with brownish-yellow; lower parts transversely barred with whitish or greyish-yellow.

Male, 24, 45, 12, $1\frac{1}{2}$, $1\frac{6}{12}$, $1\frac{4}{12}$, $\frac{4}{12}$. Female, 20, 44

This species, which is inferior in size to Cataractes Richardsonii, is of rare occurrence on our coasts, where it appears merely as a straggler. It breeds in the arctic regions of both continents, and is especially abundant in Greenland and Newfoundland. According to Mr Audubon, it extends in winter as far south as the Gulf of Mexico. On the coasts of Europe it is very rare at that season. Its habits are in all respects similar to those of the preceding species.

Lestris parasitica, Temm. Man. d'Ornith. iv. 501.—Cataractes parasiticus, Long-tailed Pirate-Bird, MacGillivray, Brit. Birds, v.

FAMILY LI. PROCELLARINÆ. PROCELLARINE BIRDS.

The last family in the series of British Birds is composed of species varying greatly in size, some of those which do not visit our shores being among the largest of the wanderers of the ocean, while others, and among them one of our own, are not larger than a swallow. They may all be known at once by the peculiar tubular form of their nostrils. The body is rather full or slender; the neck of moderate length; the head rather large. Bill shorter than the head, strong or moderately stout, com-

pressed; upper mandible with the ridge formed of two generally united plates, at the anterior part of which are the more or less tubular nostrils, the tip decurved, compressed, and pointed; lower mandible with the angle very long and narrow, the edges sharp, the tip decurved. Mouth wide; palate longitudinally ridged; tongue tapering, acuminate, flat above; œsophagus of moderate width, but within the thorax dilated into an enormous sac; stomach very small, usually reversed; intestine long, slender; cœca very small, or wanting. Feet of moderate length, rather slender; tibia bare below; tarsus little compressed; toes four; the first extremely small and elevated, with a large conical decurved or deflected claw; anterior toes webbed; claws arched, compressed, acute: Plumage soft, full, rather compact above; wings long, rather narrow, pointed; tail short, of from twelve to sixteen feathers.

These birds lead a peculiarly erratic life, most of them not only wandering along the coast, but over the ocean at vast distances from land. They feed on fish, carcasses of various kinds, crustacea, mollusca, and other animals, as well as fatty matters floating on the sea.

GENUS CLV. PROCELLARIA. FULMAR.

The Fulmars are birds of large or moderate size, resembling Gulls and Albatrosses in their form and habits. The body is rather full; the neck of moderate length, or short; the head rather large and ovate. Bill rather shorter than the head, stout, moderately compressed, straight, with the tip much decurved; upper mandible with the dorsal line straight or concave, then abrupt at the nasal apertures, which are dorsal, the plate covering the nostrils separated by grooves from the erect convex sides, the terminal unguis or tip strong, decurved, acute; lower mandible with the angle long and narrow, the sides erect, with a longitudinal groove, the edges sharp, the dorsal line very short, ascending, slightly concave, the edges decurved at the end. Mouth

rather wide; tongue slender, tapering; œsophagus wide, and dilated within the thorax into an enormous sac; stomach small, reversed; intestine of moderate length and width. Feet of ordinary length, stout; tibia bare below: tarsus reticulated; hind toe extremely small, with a conical claw; anterior toes slender, with full webs; claws moderate, arched, compressed, acute. Plumage full, close, blended, on the upper parts somewhat compact; wings very long, narrow, pointed; tail short or moderate, of from twelve to sixteen feathers.

Oceanic birds, of nomadic habits, feeding on animal substances, and nestling on maritime cliffs. One species only occurs in Britain.

315. Procellaria glacialis. Northern Fulmar.

Bill shorter than the head, stout, moderately compressed, with the nasal plate concave in its median line, and flattened; tail slightly rounded, of fourteen feathers; bill and feet greenish yellow; head, neck, and lower parts white; back and wings pale greyish-blue; tail bluish-white; primary quills and coverts blackish-brown. Young light brownish-grey, with the feathers of the back and wings darker at the end.

Male, 18, 32, 13, $1\frac{1}{12}$, 2, $1\frac{9}{12}$, $\frac{4}{12}$. Female, 17, 30.

The Fulmar inhabits in summer the arctic regions of both continents, and in winter advances southward. It is of rare occurrence on our coasts, although it breeds in vast numbers on the island of St Kilda. The egg, which is deposited in a slight nest on the rocks, is of large size, two inches and a half in length two inches in breadth, and of a pure white colour. The young remain until fledged, and are fed with matter, chiefly of an oily nature, disgorged by their parents. It is remarkable that, whatever be the nature of the food of the fulmar and other birds of this series, a quantity of generally pure oleaginous matter is usually found in the gullet. It appears to me that this oil can hardly be obtained entirely as food, but is the product of some secretion or conversion. Voyagers, however, state that this species greedily devours the blubber of dead whales, and the common opinion is that all the Fulmars and Petrels obtain oily and fatty matters floating on the sea. When seized they eject by the mouth, and, it is said, squirt through the nostrils, this oil, which the people of St Kilda thus collect for economical purposes. It is of a clear amber

colour, becoming of a deeper tint when kept. I have observed great differences in the size, form, and colour of the bill in this species.

Fulmar. Fulmar Petrel. Mallemoke.

Procellaria glacialis, Linn. Syst. Nat. i. 562.—Procellaria glacialis, Lath. Ind. Ornith. ii. 823.—Procellaria glacialis, Temm. Man. d'Ornith. ii. 802.—Procellaria glacialis, Northern Fulmar, MacGillivray, Brit. Birds, v.

GENUS CLVI. PUFFINUS. SHEARWATER.

The Shearwaters are birds of moderate or rather small size, intermediate in form between the Fulmars and Petrels, and resembling both in their habits. Their body is moderately full; the neck rather short: the head rather large, and oblong. Bill of about the length of the head, rather slender, much compressed toward the end, slightly recurved, with the tips decurved; upper mandible with the dorsal line nearly straight, abrupt at the nostrils, which are dorsal, each covered with a lateral convex plate, sides convex, edges sharp, tip strong, much compressed, decurved, acute; lower mandible with the angle very long and narrow, the dorsal line decurved, the edges sharp and inflected, the tip decurved and acute. Feet rather large, placed far back; tibia bare below; tarsus moderate, compressed, reticulated; hind toe rudimentary or obsolete, but with a small conical deflected claw; anterior toes long, slender, with full webs; outer toe slightly longer; claws arched, compressed, acute. Plumage full, close, blended, on the upper parts rather compact; wings very long, narrow, pointed; tail moderate, graduated or rounded, of twelve feathers.

The Shearwaters are distinguished from the Fulmars by their much more slender and compressed bill, of which both points are decurved, and by their more compressed tarsi. They are oceanic birds, of wandering habits, having a rapid gliding flight, and somewhat nocturnal, like the Petrels. Their food consists of animal substances of various kinds, and is picked up from the water, generally while the bird is hovering. They and the Petrels exhibit in the highest degree the habit, common to them and Mews and Gulls, of letting down their feet while hovering, and patting the wa-

ter with them. The gullet is commonly found to contain oily matter, which the bird disgorges on being seized. Three species are admitted as British.

316. Puffinus arcticus. Arctic Shearwater.

Bill of the same length as the head, rather slender, compressed, two inches and a third long, yellowish-green, with the tips brownish-black; tarsus two inches and a quarter long; feet greenish-grey, with the webs flesh-coloured; tail graduated; upper parts deep greyish-brown, hind-neck paler and more grey; primary quills and tail brownish-black; lower parts greyish-white; axillaries and lower tail-coverts greyish-brown toward the end.

Male, 20, 45, $2\frac{4}{12}$, $2\frac{1}{4}$, $2\frac{7}{12}$, $1\frac{6}{12}$.

This species, according to M. Temminck, has generally been mistaken for Puffinus cinereus, which inhabits the Mediterranean. It is said to be abundant in the Arctic seas, and, according to Mr Audubon, ranges in winter from Canada to the Gulf of Mexico. Several individuals have occurred in England; but it appears doubtful whether there may not have been some also of Puffinus cinereus; and at present I have no means of ascertaining.

Puffinus major, Puffin majeur ou arctique, Temm. Man. d'Ornith. iv. 507.—Puffinus cinereus, Aud. Ornith. Biog. iii. 555.—Puffinus cinereus, Cinereous Shearwater, Selby, Illust. ii. 528.—Puffinus arcticus, Arctic Shearwater, MacGillivray, Brit. Birds, v.

317. Puffinus Anglorum. Manks Shearwater.

Bill slender, dusky, at the base dull yellow, an inch and a half long; tarsus an inch and three-fourths, flesh-coloured internally, as are the inner toe and half of the third, the rest black, the webs dingy yellow; all the upper parts glossy brownish-black, the lower white, the sides of the neck and breast barred with grey. The young, according to M. Temminck, have all the lower parts of a dark grey colour.

Male, 16, 32, $9\frac{1}{2}$, $1\frac{8}{12}$, $1\frac{9}{12}$, $1\frac{9}{12}$, $1\frac{4}{12}$.

This species inhabits the northern coasts of Europe in summer, arriving generally in March, and departing in September. It is said to breed in the Shetland and Orkney Islands and in St Kilda, laying a single large white egg, in a hole or fissure of the cliffs.

Lyrie, Scraber, Shearwater.

Procellaria Anglorum, Temm. Man. d'Ornith. ii. 806; Puffinus Anglorum, iv. 509.—Puffinus Anglorum, Manks Petrel, MacGillivray, Brit. Birds, v.

318. PUFFINUS OBSCURUS. DUSKY SHEARWATER.

Bill of the length of the head, little compressed, an inch and a quarter long, light blue, at the end black: tarsus an inch and a half in length, black externally, as are the toes, the webs flesh-coloured; tail much rounded; upper parts brownish-black, lower pure white.

Male, 12, 28, 9, $1\frac{4}{12}$, $1\frac{1}{2}$, 2, $1\frac{3}{12}$.

This species belongs to the southern and tropical regions of the globe, although individuals have sometimes been found far north.

Procellaria obscura, Gmel. Syst. Nat. i. 559.—Procellaria obscura, Lath. Ind. Ornith. ii. 828.—Procellaria obscura, Temm. Man. d'Ornith. ii. 808.—Puffinus obscurus, Dusky Shearwater, MacGillivray, Brit. Birds, v.

GENUS CLVII. THALASSIDROMA. PETREL.

The birds of which this genus is composed are the smallest of those which, being furnished with interdigital membranes, are peculiarly adapted for swimming. They are of slender form, having the body very small, compared with the bulk of plumage with which it is covered; the neck short and slender; the head ovate and compressed. Bill shorter than the head, slender, much compressed, decurved at the end, and acute; upper mandible with the dorsal line at first direct or concave, then abrupt at the end of the nasal tube, afterwards nearly straight for a short space, and finally much decurved, the ridge elevated and separated by grooves from the sides, the edges sharp, approximating toward the end, the tip compressed, decurved, acute; nostrils dorsal, submedial, opening in front by two approximated tubes; lower mandible with the intercrural space narrow, the lower outline of the crura decurved, the dorsal line declinate and concave, the edges sharp, close together at the end, the tip compressed and decurved; mouth of moderate width, dilatable; palate convex, with four ridges; tongue somewhat triangular, much flattened, toward the end horny and pointed; œsophagus enlarged below into an enormous proventri-

cular sac, covered with scattered glandules; stomach very small, elliptical, reversed; pylorus on the left side; intestine at first arched upward and to the right, before forming the duodenal curve, then rather long and narrow, with small cœca or none. Eyes rather small, as are the apertures of the ears. Legs slender, placed well forward; tibia long, bare for about a fourth; tarsus moderate or rather long, very slender, anteriorly reticulate; hind toe extremely diminutive, with a small conical claw; anterior toes rather long, slender, scutellate, the third longest; interdigital membranes striate, and emarginate; anterior claws small, little arched, compressed, rather acute. Plumage full, very soft, blended; wings very long and narrow, primary quills very long, tapering, obtuse, the second longest: tail moderate or long, of twelve feathers, but varying in being graduate, rounded, even, or forked.

The predominating colours are greyish-black and sooty-brown. The Petrels, during a great part of the year, roam over the seas, but in the beginning of summer collect into bands, and resort to particular breeding-places, to nestle in the crevices of rocks, under stones, or in holes in the turf. The single egg is white, large, and elliptical. The sitting birds are easily caught in their nests, and the young remain concealed until able to fly. On being seized, these birds, like the Fulmars, discharge the contents of their gullet, generally consisting of oil. They feed on oily and fatty substances, crustacea, and other objects, which they pick up as they skim over the water. They float lightly, fly in a rapid and buoyant manner, pat the water with their feet when hovering, are often seen about vessels in the ocean, and are held in dislike by sailors, who name them Mother Carey's Chickens. One species only is common on the British coasts, but other three have been met with.

319. Thalassidroma Bulweri. Bulwer's Petrel.

Tail cuneate; bill and feet black; plumage deep sooty-black, on the lower parts slightly tinged with brown; secondary coverts paler; length ten inches.

First described and figured by Sir William Jardine Bart., and Prideaux John Selby, Esq. in the second volume of their Illustrations of Ornithology; afterwards, in the fourth vo-

lume of his Birds of Europe, by Mr Gould, who states that a fine specimen was found on the banks of the Ure, near Tanfield, in Yorkshire, on the 8th of May 1837, and is in the possession of Colonel Dalton of Slenningford.

Procellaria Bulwerii, Bulwer's Petrel, Jard. and Selb. Illust. pl. 65.—Bulwer's Petrel, Thalassidroma? Bulwerii, Gould, Birds of Europe, pl. 449.

320. Thalassidroma Leachi. Leach's Petrel.

Tail forked; bill and feet black; plumage greyish-black tinged with brown; quills and tail brownish-black; smaller wing-coverts and inner secondaries light greyish-brown; feathers of the rump, sides of abdomen, and outer lower tail-coverts, white; upper tail-coverts white, tipped with black; length nearly eight inches.

Male, $7\frac{1}{12}$, 20, $6\frac{4}{12}$, $\frac{8}{12}$, 1, $\frac{10}{12}$, $\frac{3}{12}$.

This Petrel was discovered, in 1818, by Mr Bullock, in the island of St Kilda. It has since been repeatedly met with on various parts of the coast, and has several times been found dead, or in an exhausted state, even far inland, during or after stormy weather, in winter. It is said to be plentiful on the Banks of Newfoundland, and on some parts of the coast of North America.

Procellaria Leachii, Temm. Man. d'Ornith. ii. 812.—Thalassidroma Leachi, Leach's or Fork-tailed Petrel, MacGillivray, Brit. Birds, v.

321. Thalassidroma Wilsoni. Wilson's Petrel.

Tail even; bill and feet black, but the interdigital membranes yellow in the middle; plumage greyish-black tinged with brown above, sooty-brown beneath; outer secondary wing-coverts and some of the secondary quills light brownish-grey, terminally edged with white; rump, sides of abdomen, and outer lower tail-coverts white; length seven inches and a half.

Male, $7\frac{1}{2}$, 16, 6, $\frac{7}{12}$, $1\frac{4}{12}$, $1\frac{1}{12}$, $\frac{4}{12}$.

This species, named by the Prince of Canino in honour of the celebrated Scoto-American ornithologist, is said to breed on various parts of the coasts of North America, and to occur plentifully on the Atlantic Ocean. It is admitted into the British Fauna as an occasional visitant.

Thalassidroma Wilsoni, Bonap. Synops. 367.—Wilson's Petrel, Thalassidroma Wilsonii, Audub. Ornith. Biogr. iii. 486; v. 645.—Thalassidroma Wilsoni, Wilson's Petrel, MacGillivray, Brit. Birds, v.

322. Thalassidroma pelagica. Storm Petrel.

Tail slightly rounded; bill and feet black; plumage greyish-black above, sooty-brown beneath; secondary coverts margined externally with dull greyish-white; feathers of the rump, and sides of abdomen, white; upper tail-coverts white, broadly tipped with black; length nearly six inches. Young of lighter tints, with the feathers edged with reddish-brown.

Male, $5\frac{1}{12}$, $13\frac{1}{2}$, $4\frac{10}{12}$, $\frac{6}{12}$, $\frac{10}{12}$, $\frac{8}{12}$, $\frac{2}{12}$. Female, $5\frac{9}{12}$, $13\frac{1}{4}$.

This species, the smallest of the European web-footed birds, is indigenous with us, breeding in Cornwall, Shetland, Orkney, and the Hebrides, in holes in the rocks, or under stones on the sea-beach. The egg is single, nearly elliptical, an inch and a twelfth long, ten-twelfths broad, pure white, without gloss, generally with a belt of minute dark-red dots at the large end. It disappears from all its breeding-places after the young are reared, and seems to reside on the open sea during winter. It has a buoyant and gliding flight, floats lightly on the water, swims with ease, lets down its feet occasionally when skimming over the waves, and has thus been imagined to walk on the sea; whence the name Petrel or little Peter, given to this and other species. It frequently appears in the wake of vessels, and picks up portions of animal and vegetable substances; but generally its gullet and stomach are found to contain oily matter, which, on being seized, it vomits, like the other species of this family. I have seen the delicate-looking little creatures, in rough weather, gliding over the waves, at the height of scarcely a foot above the surface, which they followed in all its undulations, mounting to the top of the wave, there quivering in the blast, then shooting down the slope, resting a moment in the sheltered hollow, and again ascending.

Mother Carey's Chicken. Storm-finch. Little Petrel. Water-witch. Alamouti. Asilag. Spency. Sea-Swallow.

Procellaria pelagica, Linn. Syst. Nat. i. 212.—Procellaria pelagica, Lath. Ind. Ornith. ii. 826.—Procellaria pelagica, Temm. Man. d'Ornith. ii. 810.—Thalassidroma pelagica, Storm Petrel, MacGillivray, Brit. Birds.

APPENDIX.

In the thirty-fifth number of the Annals and Magazine of Natural History, for October 1840, is an account, by Mr G. R. Gray, of a specimen of "Sylvia luscinioides," found by Mr J. Baker in the fens of Cambridgeshire. The following is the specific description given:—

322. SYLVIA LUSCINIOIDES. SAVI.

"General colour above castaneous brown, with the tail very inconspicuously barred with darker; line over the eyes, breast, sides, and under tail-coverts, paler than the upper parts; throat and middle of the abdomen albescent, the former slightly spotted triangularly with darker. The first quill very short, and the second longest of all. Upper mandible brown, lower and feet yellowish-brown.

"Total length, $5\frac{1}{4}$; bill, $\frac{8}{12}$; wings, $2\frac{1}{2}$; tail, $2\frac{1}{4}$; tarsi, $\frac{9}{12}$."

Of Mr Bellamy's Sylvia neglecta, I can say nothing with certainty. The Canada Goose has perhaps a right to be admitted into the British Fauna, and there may be several other species having equal claims. The American Wigeon, also, has been found in one of the London markets, and therefore might have been described as British.

On the whole, the present Manual seems to me to contain a pretty accurate account of the Birds of Britain, and is such a work as I should have been well pleased with when I commenced the study of ornithology, with no other guides than Linnæus, Pennant, and Montagu. In the department of British Ornithology, the works most to be recommended to the student

seem to me to be those of Mr Selby and Mr Yarrell, and the British Birds of Sir William Jardine, in Mr Lizars' useful Naturalist's Library. The country has now been so well explored, that very few additional species can ever be met with; yet the number that has been unexpectedly added to the list of late years may possibly be yet increased by equally unexpected species.

I have now accomplished my task, which has cost me not a little trouble. Whatever my fellow-labourers may think of it, I feel that I can conscientiously recommend it to the student, and am assured that, imperfect as it must necessarily be, it will be found useful in promoting a study calculated to afford much delight, with as little pain as we usually find accompanying the most harmless of human pursuits. It is most gratifying to me to know that I have afforded aid to many individuals in their endeavours to obtain some knowledge of the natural objects which present themselves wherever we direct our view; and that neither the neglect, contumely, and opposition which I have experienced have abated my ardour in the pursuit of knowledge, nor the approbation, esteem, and aid which many have generously accorded, have tended to foster the arrogance and self-esteem which are very apt to flourish luxuriantly, under such circumstances, in the human heart. To ornithological friends I offer my grateful thanks, to authors whose works have aided me my best wishes, and to the students who may use the present manual my advice to lay it aside whenever they find one better adapted for their purpose.

W. MacGillivray.

Marischal College, Aberdeen,
5th April, 1842.

APPENDIX

OF

RECENTLY OBSERVED SPECIES.

ORDER I. RAPTRICES.

FAMILY I. VULTURINÆ.

GENUS, VULTUR. VULTURE.

Bill of moderate length, strong, compressed; upper mandible cerate to near the middle, with the dorsal line straight, toward the end rounded, the sides convex, the tip decurved and pointed; lower mandible with the angle long, the dorsal line convex, the sides nearly erect, the tip obtuse. Nostrils large, oblong, oblique, near the margin of the cere. Eyes and auditory apertures of moderate size. Feet very strong; tarsus roundish, reticulated with small scales; toes with scutella only toward the end, the first toe small, the third very long, the second shorter than the fourth; the anterior toes webbed at the base. Claws rather long, arched, moderately compressed, acute. Head and neck covered only with short down; plumage full, compact; wings very long and broad, with the first quill short, the third and fourth longest; tail of moderate length, much rounded. The species of this genus belong to Asia, Africa, and Southern Europe.

323. Vultur Fulvus. Griffon Vulture.

Adult male and female with the bill pale yellowish-grey inclining to white, the cere bluish-black, the feet bluish-grey, the claws black; the head and neck covered with short white down; the ruff and down on the breast white; the upper parts light-yellowish-brown, the primary quills and tail-feathers blackish-brown, the lower parts light reddish-brown, paler anteriorly.

Male about 40, Female 48 inches, in length.

Mr. Yarrell states that Admiral Bowles, on visiting Lord

Shannon, in the autumn of 1843, saw a bird of this species, which had been caught by a youth on the rocks near Cork Harbour, in the spring of that year, and purchased by the gamekeeper. Mr. Thompson, in the Annals and Magazine of Natural History, for May 1845, informs us that, "the attention of Mr. R. Ball being called to the circumstance, he made inquiry of Lord Shannon, who replied, that the bird was purchased by his steward for 2s. 6d. from a peasant, who stated that he caught it on the sea-shore in that neighbourhood: its plumage was in good order. His lordship politely offered the bird to Mr. Ball for the collection in the garden of the Zoological Society, Dublin, but before arrangements were completed for its transmission it died. The specimen was, by the directions of Lord Shannon, carefully preserved and stuffed and placed at the disposal of Mr. Ball, who has added it to the collection in Trinity College, Dublin. It is in adult plumage."

This species inhabits various parts of Africa, Turkey, Greece, Albania, the Archipelago, France, and even Germany.

Vultur fulvus. Linn. Syst. Nat. Gmel. i. 249. —Vultur fulvus, Temm. Man. d'Ornith. i. 5.—Thompson, Ann. Nat. Hist. xv. 308.—Yarrell, Brit. Birds, Suppl. 8.

ORDER I. RAPTRICES.

FAMILY II. FALCONINÆ.

GENUS III. AQUILA. EAGLE.

324. Aquila Nævia. Spotted Eagle.

Tail slightly rounded, not extending beyond the wings; the general colour of the plumage reddish-brown; the feathers of the head, neck, tarsus, and inner part of the tibia lighter; the quills and tail-feathers blackish-brown. Young with the plumage dark chocolate-brown, the wing-coverts, secondary quills, and dorsal feathers, tipped with a crescent of pale yellowish-brown, the lower parts dark-brown, with pale spots; the tibial and tarsal feathers paler.

Male, about 23, Female, 26 inches, in length.

Very similar to Aquila Chrysaetus, but much smaller. It is found in India, Asia Minor, Siberia, Egypt, Northern

Africa, the South of Europe, France, Belgium, Germany, and Russia. Mr. Yarrell states, on the authority of Mr. Robert Davis, jun., of Clonmel, that an individual of this species was shot in January, 1845, on the estate of the Earl of Shannon, and is now, as a "specimen," in possession of Samuel Moss, of Youghal, County Cork. Another bird of the same kind was shot at the same place, but unfortunately not preserved.

Falco nævius and F. maculatus. Gmel. Syst. Nat. i. 258.—Falco nævius. Temm. Man. d'Ornith. i. 42.—Aquila nævia, Gould, Birds of Europe.—Aquila nævia. Yarrell, Brit. Birds, Suppl. 11.

FAMILY VII. CUCULINÆ.

GENUS XXI. CUCULUS. CUCKOO.

325. Cuculus Glandarius. Great Spotted Cuckoo.

Feathers of the head elongated, acuminate, forming a decumbent crest, of a dark-grey colour, as are the cheeks; upper parts greyish-black, the feathers of the wings and the tail-coverts tipped with white; the tail long, graduated, the two medial feathers greyish-brown, the rest darker, all tipped with white; the lower parts white, anteriorly tinged with reddish; bill, tarsi, toes, and claws, bluish-black.

Male, 15 . ., $8\frac{3}{12}$, $\frac{10}{12}$, $1\frac{10}{12}$, $\frac{4}{12}$.

Of this species, which is said by authors to inhabit Senegal, Egypt, Syria, the Barbary Coast, Spain, and other southern countries, and to appear occasionally in France and Germany, an individual was taken in the County of Galway, in the winter of 1843. The event was made known by Mr. Ball, who subsequently informed Mr. Yarrell, that it "was taken by two persons walking on the Island of Omagh, where, pursued by hawks, it flew for refuge into a hole in a stone-fence, or wall, was taken alive and lived for four days (attempt being made to feed it on potatoes). The specimen has been presented to Trinity College, Dublin, and is now in the Museum."

Cuculus glandarius. Linn. Syst. 169. — Cuculus glandarius, Lath. Ind. Ornith. i. 208. — Cuculus glandarius, Temm. Man. d'Ornith. iii. 274. — Cuculus glandarius, Yarrell, Brit. Birds, Suppl. 35.

ORDER VII. CANTATRICES.

FAMILY XVI. TURDINÆ.

GENUS IXOS.

Bill shorter than the head, rather slender, depressed at the base, compressed toward the end; upper mandible with the ridge narrow, the dorsal line arched and declinate, the sides convex, the nasal sinuses large, the edges sharp, with the notches distinct but small, the tip acute and declinate; lower mandible with the angle rather large, the dorsal line straight, the tip pointed. Nostrils oblong, direct in the fore part of the nasal membrane, which is bare anteriorly. Eyes of moderate size, eyelids partially bare. Aperture of ear rather large, roundish. Head ovato-oblong; neck rather short; body moderate; tarsus short, slender, compressed, with a long plate and four scutella, of which the lower two are divided; toes small, hind toe proportionally large, shorter than the tarsus, third toe longer, lateral nearly equal; claws slender, faintly grooved, arched, acute. Plumage rather blended, distinct bristles at the base of the bill; wings rounded, with the first quill very small, the fourth, fifth, and sixth longest and nearly equal, tail moderate or rather long, nearly even.

The species of this genus, African and Indian, appear to me to be as much Flycatchers as Thrushes. I have taken the above generic characters from skins of Ixos aurigaster and Ixos hæmorrhous in my collection.

326. Ixos Aurigaster. Gold-vented Thrush.

Adult with the feathers of the forehead and crown slightly elongated; the bill, tail, toes, and claws, black; the head blackish-brown, the neck, back, wings, and tail-feathers, uniform umber-brown; the throat and fore-neck clove-brown, the breast lighter, passing into dull white; the feathers under the tail bright-yellow.

Male, 88, . . , $3\frac{1}{2}$, $\frac{8}{12}$, $\frac{11}{12}$, $\frac{7}{12}$, $\frac{4}{12}$.

The above, with exception of the measurements which I have taken from a skin, are the principal particulars of

the description given by Mr. Yarrell, of a bird shot in the south of Ireland, in January 1838. Mr. Thompson, in his "additions to the Fauna of Ireland, Ann. Nat. Hist. xv. 308, has the following note respecting it:—"Pycnonotus chrysorhæus, Swainson. At the meeting of the British Association held at Cork, in 1843, I exhibited at the Natural History Section, an example of this African species sent for inspection from the collection of native birds, or those killed in Ireland, belonging to Dr. Burkitt of Waterford. Dr. B. purchased it from a country-lad who brought it into Waterford, in January 1838, with a number of black birds and snipes, and who thought it was a hen blackbird; he shot it at Mount Beresford, three and a half miles from Waterford." Mr. Yarrell, who has figured and described the identical specimen, considers this species as referrible to the genus Ixos of M. Temminck, which Mr. Swainson seems to consider nearly identical with his sub-family of Brachypodinæ. The species in question, he refers to a sub-genus which he names Hæmatornis.

Turdus aurigaster, Vieill. Encycl. Method. 657.—Turdus chrysorhæus, Temm. pl. Oveir.—Turdus aurigaster, Yarrell, Brit. Birds, suppl. 15.

GENUS, PETROCINCLA. ROCK-THRUSH.

Bill of moderate length, rather slender, straight, compressed; upper mandible with the ridge narrow, the dorsal line slightly arched toward the end, the sides convex, the edges sharp, the notches obsolete, the tip very small and slightly decurved: lower mandible with the angle moderate, the dorsal line nearly straight, the tip acute; gape-line straight. Nostrils oblong, direct, in the lower and forepart of the nasal membrane, which is feathered. Eyes of moderate size, eyelids feathered. Aperture of ear rather large, roundish. Head ovate; neck short; body compact; tarsus rather stout, short, compressed, anteriorly with a long plate and four scutella, posteriorly with two longitudinal plates; toes moderate, with large scutella, the third and fourth slightly connected at the base, the lateral about equal; claws slender, much compressed, laterally grooved, arched, acute. Plumage rather blended; short basi-

rostral bristles; wings rather long, with the first quill very short, the third longest; tail short, even or slightly emaginate.

The species of this genus, which belongs as much to the Saxicolinæ as to the Turdinæ, inhabit the rocky and stony parts of the mountainous districts of the Mediterranean, as well as the Tyrol, Switzerland, France, and Germany. They feed on insects and berries, and resemble the Saxicolæ in their habits.

327. Petrocincla Saxatilis. Common Rock-Thrush.

Male, with the head and neck all round greyish-blue; anterior part of the back similar, scapulars tinged with brown; the rest of the back white, upper tail-coverts dark-brown; wings and two middle tail-feathers dark-brown, the rest of the tail-feathers and the lower part of the body light chestnut-red. The female, according to M. Temminck, "has all the upper parts of a dull-brown; on the back some large whitish spots bordered with brown; the throat and sides of the neck of a pure white, but usually the feathers edged with greying-brown; all the other lower parts reddish-white, with fine transverse lines at the end of each feather; tail of a light brownish-red, the two middle feathers greyish-brown.

Male, 8, . ., $4\frac{10}{12}$.

The specimen of this beautiful bird, figured and described by Mr. Yarrell, he informs us, "was obtained on the 19th of May 1843, by Mr. Joseph Trigg, who shot it at Therfield, near Royston, in Hertfordshire, while it was sitting on an ash tree in the evening." According to Temminck, this species frequents the highest rocky mountains, and is met with in Switzerland, the Tyrol, Hungary, Turkey, the Archipelago, the Appenines, Alps, and Pyrenees; more rarely along the coasts of the Mediterranean; at intervals, on the Volga, and other high mountains in France; more rarely, in Germany. It feeds on insects and berries, nestles in the clefts of crags or under fragments of rocks, and lays four greenish-blue eggs.

Turdus saxatilis, Linn. Syst. Nat. 294. — Turdus saxatilis. Lath. Ind. Ornith. i. 336.—Turdus saxatilis, Temm. Man. d'Ornith. i. 172.—Petrocincla saxatilis, viz. Yarrell, Brit. Birds, append. 18.

FAMILY XX. ALAUDINÆ.

GENUS LIV. ALAUDA. LARK.

328. Alauda Cristata. Crested Lark.

A small tuft of elongated and acuminate feathers on the head; bill slightly arched; hind claw straight, longer than the toe; upper part of the head light reddish-brown, streaked with dusky; a yellowish-white streak from the eye over the ears; hind neck and ear-coverts dark-brown; back and wing-coverts brown, each feather with a central dusky patch; quills chocolate-brown, the tail-feathers light-brown, the rest dark, the outer two light-red at the end; upper part of the throat white; fore neck, breast, and sides pale yellowish-brown, streaked with darker; the rest of the lower parts plain yellowish-white; bill and feet yellowish-grey.

Male, $6\frac{10}{12}$, . ., $4\frac{2}{12}$, $\frac{7}{12}$.

In the Dublin Penny Journal, of February 27th, 1836, is a notice, signed W. R., of a specimen shot by the writer, near Taney. Mr. Yarrell describes another subsequently killed in Sussex. This species is very like the Common Lark, but with the bill stronger, and a distinct decumbent, erectile crest. It is found in most European countries from Scandinavia to the Mediterranean, as well as North Africa, Egypt, and Anatolia.

Alauda cristata. Gmel. Linn. Syst. Nat. 796. — Alauda cristata, Lath. Ind. Ornith. ii. 499. — Alauda cristata, Temm. Man. d'Ornith. i. 277. — Alauda cristata, Yarrell, Brit. Birds. suppl. 26.

329. Alauda Brachydactyla. Short-toed Lark.

Some of the secondary quills as long as the primaries, when the wing is folded; toes very short; bill and feet light-brown; upper parts light reddish-yellow, streaked with deep-brown; throat and a band over the eyes pure white; breast and sides pale-red; abdomen reddish-white; the two middle tail-feathers black in the middle, bordered with deep red, the next three on each side bordered and tipped with light-red, the next reddish-white on the outer web, the outermost nearly all of that colour, but more reddish towards the end.

Length, $5\frac{9}{12}$.

Said to be plentiful in Spain and Italy, and to occur in the South of France, along the Mediterranean.

Alauda brachydactyla, Temm. Man. d'Ornith. i. 284.—Gould, Birds of Eur. iii.

ORDER VIII. DEGLUBITRICES.

FAMILY XXII. ICTERINÆ.

Bill of moderate length, or short, stout, straight, conical, pointed; upper mandible with the dorsal line nearly straight, the nasal sinus short and very wide, the ridge encroaching on the forehead, the sides rounded, the edges without notch; lower mandible with the angle short and rounded, the dorsal line straight, the edges involute, the tip pointed. Upper mandible internally concave, with three longitudinal ridges, the medial large, and forming a hard prominence at the base; tongue narrow, and pointed; œsophagus wide, dilated about the middle; stomach roundish, or elliptical, with the lateral muscles well developed; epithelium dense and longitudinally rugose; intestine short, and rather wide; cœca very small, cylindrical; cloaca oblong. Nostrils basal, roundish or oblong. Eyes of moderate size. Aperture of ear rather large. Head rather large, ovate; neck generally short; body moderately full. Tarsi compressed, with seven or eight anterior scutella; hind-toe large, lateral toes equal, the outer adherent at the base; claws generally long, arched, compressed, acute. Plumage soft and blended, in the males usually glossy; wings of moderate length, with the outer three or four quills longest; tail of twelve feathers, varying in length.

Generally gregarious, feeding on seeds and other vegetable substances, as well as insects and worms. They occur chiefly in the warm regions of both continents.

GENUS. AGELAIUS. MARSH-BLACKBIRD.

Bill shorter than the head, stout, conical, tapering to an acute point; upper mandible with the dorsal line

straight, the ridge flattened toward the base, where it forms a short tapering process on the forehead, the sides rounded, the edges inflexed, the tip a little depressed; lower mandible with the angle short and rounded, the sides convex, the edges involute, the tip acute. Nostrils basal, oval, with a small operculum. Feet of ordinary length, rather stout; tarsus compressed; toes rather large, the first much stronger; claws long, little arched, compressed, very acute. Plumage soft, blended wings of moderate length, with the outer four quills nearly equal; tail rather long and rounded.

Birds of small size, somewhat resembling Starlings in appearance and habits, granivorous, gregarious, and often seriously injurious to growing crops of cereal plants.

330. Agelaius Phœniceus. Red-winged Marsh-Blackbird.

Male with the plumage glossy black, the smaller wing-coverts scarlet, their first row yellow, at the tip whitish. Female much smaller, with the upper parts dark-brown; some of the smaller wing-coverts tinged with red; wings and tail blackish-brown, the feathers margined with brownish-red, the first row of small coverts and secondary coverts narrowly tipped with whitish; a yellowish-brown band over the eyes; lower parts longitudinally streaked with dusky and whitish, the fore-neck strongly tinged with dull carmine. Young like the female, but with red on the wing-coverts or throat.

Male, 9, 14. Female, 7½.

This bird, which is very abundant in North America, and nowhere a regular inhabitant of Europe, has been obtained in two instances in England. The Rev. Richard Lubbock informs us in Vol. I. of the Zoologist, that a male, said to have been accompanied by another, was shot near Rollesby Broad, Yarmouth, and came into the possession of J. H. Gurney, Esq., in a fresh state, in June 1842. Mr. Yarrell, who has figured and described the individual, says, "he has been favoured with the loan of another example shot among the reeds at Shepherd's Bush, a swampy situation about three miles west of London, on the Uxbridge Road."

Icterus phœniceus. Bonap. Synops. 52. —Agelaius phœniceus. Swainson and Richardson, Fauna Bor. Amer. ii. 280. —Agelaius phœniceus, Audub. Synops. 141.—Agelaius phœniceus, Yarrell, Brit. Birds, Suppl. 30.

ORDER XII. RADRICES.

FAMILY XXX. PERDICINÆ.

GENUS LXXIX. PERDIX. PARTRIDGE.

331. Perdix Petrosa. Barbary Partridge.

Adult male with the bill, the bare space around the eyes, the tarsi, toes, and claws, red; sides of the head bluish-grey; its upper part and the hind-neck chestnut-brown; neck with a broad collar of the same, spotted with white; back and tail greyish-brown, wing-coverts edged with light-red; primary quills brownish-black, with the outer web greyish-brown; fore-neck bluish-grey, breast buff; sides barred with black, white, and chestnut; the rest of the lower parts reddish-yellow. Female with the colours duller, the tarsi without tubercles.

Male, 13, . ., 6.

This species is very extensively distributed in Africa, especially along the Mediterranean, and occurs in Turkey, Greece, Calabria, Sweden, Spain, and France. It inhabits barren or rugged tracts, feeding on seeds and insects, and deposits numerous eggs, of a faded yellow, dotted with greenish-yellow. In April 1842, an individual was found dead at Edmondthorpe, about six miles from Melton Mowbray, in Leicestershire. Information of this was given to Mr. Yarrell, by Mr. Robert Widdowson, who had the specimen in his possession. Mr. Yarrell further states, that it now belongs to Mr. Thomas Goatley, of Chipping Norton, Oxfordshire, who lent it for his use.

Perdix petrosa. Lath. Ind. Ornith. ii. 648.—Perdix petrosa, Temm. Man. d'Ornith. ii. 487.—Perdix petrosa, Yarrell, Brit. Birds, Suppl. 39.

ORDER XII. RADRICES.

FAMILY XXX. PERDICINÆ.

GENUS. HEMIPODIUS. HEMIPODE.

The species of which this genus is composed are all

of very small size, few of them being so large as the Common Quail, and several not half the size. They differ from the Quails in the form of the wing, in their longer tarsi, and in wanting the hind toe. The bill is short, rather stout, much compressed, with the outline of the upper mandible gently decurved from near the base, the sides little convex, the edges direct, the tip pointed; lower mandible with its angle long and narrow, its outline straight and ascending, its edges slightly inflexed. Nostrils lateral, linear, partly closed by a membrane; a partially bare space around the eye. Tarsi rather long, slender, with two rows of scales before; toes of moderate length, slender, compressed, with slender, moderately curved, acute claws; the hind-toe wanting. Plumage full and soft; wings of moderate length, very broad, the primary quills much incurved, the outer three longest; tail very short, its feathers decurved, and not stronger than the coverts, which conceal them.

They inhabit Africa, India, and Australia, living in desert places, and feeding on seeds and insects. They are said to run with great celerity, but to fly little.

332. Hemipodius Andalusicus. Andalusian Hemipode.

Upper parts brown, barred with chestnut-black, and yellowish-white; head with a longitudinal light-red band; wing-coverts yellowish-brown, toward the end paler with a dusky spot; quills and tail greyish-brown; throat white; fore-neck pale-chestnut; lower parts yellowish-white; sides barred with semilunar brown spots.

Length about 6 inches.

Of this species, which inhabits Africa and Spain, it is stated by Mr. Thomas Goatley, in the Annals of Natural History, Vol. XIV., that in November 1844, he had received a Quail, having no back toe, and which he found described in Latham's General History as the Perdix Gibraltarica. It was shot by the gamekeeper on the Cornwell estate, in Oxfordshire, about three miles from Chipping Norton, and having been preserved, was figured and described by Mr. Yarrell. Mr. Goatley also states, that

another had since been killed near the same spot by the same person, but was so mutilated as to be unfit for preservation.

Hemipodius tachydromus and lunatus, Temm. Man. d'Ornith. ii. 494. — Hemipodius tachydromus, Yarr. Brit. Birds, Suppl. 43.

ORDER XVII. CRIBRATRICES.

FAMILY XLI. ANSERINÆ.

GENUS CXX. ANSER. GOOSE.

333. Anser Canadensis. Canada Goose.

Male about forty-three inches long; bill, feet, and claws, black; head and upper two-thirds of the neck glossy-black; forehead, cheeks, and chin, tinged with brown; lower eyelid white; a broad band of white across the throat to behind the eye; rump and tail-feathers black; general colour of the rest of the upper parts greyish-brown, wing-coverts shaded with ash-grey, all the feathers terminally margined with very pale-brown; upper tail-coverts white; lower part of neck passing to greyish-white, which is the general colour of the lower parts, the abdomen, however, being pure white; the sides pale brownish-grey, the feathers margined with white; the lower wing-coverts pale brownish-grey. Female similar.

Male, 43, 65, 20, $2\frac{1}{2}$, $3\frac{7}{12}$, $3\frac{9}{12}$, $7\frac{7}{12}$.

Individuals of this species apparently truly wild are of not very uncommon occurrence in Britain; but as the species has long been domesticated there, it is not quite certain that these are to be reckoned other than emancipated birds, or their offspring.

Anas Canadensis, Linn. Syst. Nat. i. 198.—Anser Canadensis, Bonap. Synops. 377.—Canada Goose, Yarr. Brit. Birds, iii. 91.

GENUS. PLECTROPTERUS. SPUR-WINGED GOOSE.

Characters nearly the same as those of the genus Chenalopex; but the wings with a strong pointed spur on the flexure, or carpal joint.

334. Plectropterus Gambensis. Gambo Spur-winged Goose.

About the size of the Common Grey-Goose. An individual shot near St. Germain's in Cornwall, in June 1821, figured and described by Bewick, whose account of it is as follows:—"The bill is reddish-yellow, with a jointed protuberance on the base of the upper mandible. The upper part of the head and neck are dingy-brown; the auriculars and sides of the throat are white, spotted with brown; the lower part of the neck, sides of the breast, and all the upper plumage, appear black, but this colour is lost, particularly in the scapulars and tertials, which are most resplendently bronzed and glossed with brilliant green, and most of the outer webs of the outer feathers partake of the same hue; on the bend of the wing or wrist, is placed a strong white horny spur, about five-eighths of an inch in length, turning upwards, and rather inwards; the whole of the edges of the wing from the alula spuria to the elbow and shoulders are white, all the under parts the same. This beautiful bird is nearly of the bulk of the Wild Goose, but its legs and toes are somewhat longer, and of a red or orange-yellow." This specimen is now in the Newcastle Museum.

Anas Gambensis, Bewick, Brit. Birds, ii. 313.—Spur-winged Goose, Yarr. Brit. Birds, iii. 87.

GENUS CXXVIII. MARECA. WIGEON.

335. Mareca Americana. American Wigeon.

"The American Wigeon has been considered distinct from the European; not on account of any difference in size or form, or texture of plumage, but because it has in certain stages a green band on the side of the head, which the European bird is said not to have. The mirror is the same in both; the wing-coverts are white or grey in both; the crown is white, or cream-coloured, or orange-brown, in both; but in the European the head and neck are described as reddish-chestnut, and in the American as yellowish-white. Now, in fact, American birds sometimes have the head and neck red, and European birds sometimes have the green streak on the sides of the head. In short,

on comparing specimens from America, with others from India and Norway, I cannot perceive any essential difference."—Audubon's Ornith. Biogr. The osseous cell on the wind-pipe, however, is much smaller than in the European bird.

Male, $20\frac{1}{2}$, $34\frac{1}{2}$, 11, $1\frac{7}{12}$, $1\frac{7}{12}$, $1\frac{8}{12}$, $4\frac{4}{12}$. Female, 18.

Mr. Blyth states that in the winter of 1837-8, Mr. Bartlett found a male and a female in one of the London markets; and Mr. Thompson has met with it at Belfast.

Anas Americana, Syst. Nat. i. 526.—Mareca Americana, Steph. Shawl's Zool. xii. 135.—Anas Americana, Audub. Ornith. Biogr. iv. 336.

GENUS CXXXIII. FULIGULA. SCAUP-DUCK.

336. Fuligula Mariloides. American Scaup-Duck.

Similar to Fuligula Marila, but smaller. It is doubtful whether it be a distinct species, or only a variety, scarcely even that, of the species mentioned, which also occurs in America. Mr. Yarrell, however, figures and describes an individual, purchased in Leadenhall-market.

American Scaup. Yarr. Brit. Birds, iii. 241.

GENUS CXXXI. CLANGULA. GARROT.

337. Clangula Albeola. Buffel-headed Garrot.

Male about fifteen inches long; with the bill blue, the feathers of the head and upper part of the neck elongated; excepting a triangular white patch from behind the eye upwards and backwards, the head and upper neck black, glossed with green and blue; lower part of the neck, and all the under parts of the body white; upper parts black; the scapulars, wing-coverts, and secondaries, white, the scapulars narrowly margined with black; primary quills greyish-black, tail-feathers brownish-grey; feet pale flesh-colour. Female smaller, with the feathers of the head not elongated unless in the median line; bill darker, feet greyish-blue; head, upper part of neck, hind neck, back and wings, greyish-brown; a short transverse white band from beneath the eye; six of the secondary quills white on the

outer web; lower parts white, shaded into brownish-grey on the sides.

Male, 15, 23, $6\frac{3}{4}$, $1\frac{2}{12}$, $1\frac{3}{12}$, $2\frac{3}{12}$. Female, 13, 22.

Common in North America. Included by Donovan in his "British Birds," but without reference. A male shot near Yarmouth, in the winter of 1830, and in the possession of Mr. Stephen Miller.

Anas. Albeola, Linn. Syst. Nat. i. 199.—Anas Albeola, Lath. Ind. Ornith. ii. 867.—Fuligula Albeola, Audub. Synops. 293. — Buffel-headed Duck, Yarr. Brit. Birds, iii. 273.

GENUS CXLVI. STERNA. TERN.

338. Sterna Leucopareia. Whiskered Tern.

Bill rather stout, red; feet red, with the webs very deeply cut out, the inner very small; middle toe and claw about as long as the tarsus; upper part of the head and nape black; a white band from the bill, under the eye, to the ear; upper parts, including the wings and tail, uniform dark bluish-grey; first quill leaden-grey on the outer web and a portion of the inner, the rest white, the other quills with the outer web lighter; the lower parts dark-grey; the throat, lower wing, and tail-coverts, white.

Adult, $11\frac{1}{2}$, . ., $9\frac{3}{12}$, $1\frac{1}{12}$, $\frac{10}{12}$, $\frac{9}{12}$, $\frac{4}{12}$.

Of this species, which has been met with on the Mediterranean coasts, a specimen shot in the end of August 1836, near Lyme, has been figured and described by Mr. Yarrell.

Sterna leucopareia. Temm. Man. d'Ornith. ii. 746. Whiskered Tern, Yarr. Brit. Birds, iii. 404.

339. Sterna Leucoptera. White-winged Black Tern.

Bill about the same length as the head, very slender, brown; feet red, with the webs very deeply cut out, the inner reduced to a mere rudiment; head, neck, back, breast, abdomen, and lower wing-coverts, glossy black; smaller wing-coverts, tail and its coverts, white; outer three quills black, with a broad band of white along the inner webs; the rest of the wings ash-grey, darker towards the body.

As intimated by Mr. Frederick M'Coy, in Ann. of Nat. Hist. XV. 271, a specimen of this Tern was shot by J.

Hill, Esq., on the Shannon, in 1841, and is now in the Museum of the Natural History Society of Dublin, but had remained undistinguished specifically from a Black Tern, Sterna nigra, shot at the same time, and sent along with it. "Total length, to extremity of tail, about three inches; bill from base 10½ lines, from rictus one inch, five lines; greatest depths of both mandibles 2½ lines; naked portion of the tibia four lines."

According to M. Temminck, it inhabits the bays and gulfs of the Mediterranean, is very common about Gibraltar, also visits the lakes, rivers, and marshes of the countries beyond the Alps; is very common on the Lakes of Lucarno, Lugano, Como, Isco, and Guarda, and is seen on its passage on the Lake of Geneva. It is said to feed chiefly on aquatic insects.

Sterna leucoptera, Temm. Man. d'Ornith. ii. 747. — M'Coy, Ann. Nat. Hist. XV. 271.—Yarr. Br. Birds, Sup. 60.

FAMILY L. LARINÆ.

GENUS CXLIV. GAVIA. MEW.

340. Gavia Capistrata. Masked Mew.

Bill an inch and a twelfth in length; tarsus an inch and seven-twelfths; wings two inches longer than the tail; bill and feet brownish-red; primary quills white; edged and tipped with black. In winter, the back and wings light bluish-grey; the other parts white; the head faintly marked with grey. In summer, the colours similar, but the fore-part of the head, cheeks, and throat, hair-brown, bounded by blackish-brown.

Adult, 15, . ., $11\frac{8}{12}$, $1\frac{1}{12}$, $1\frac{7}{12}$, $1\frac{2}{12}$, $\frac{4}{12}$.

Two specimens, a male and a female, from Orkney, were in Mr. Bullock's Collection. Another from Shetland was presented, in 1831, by Mr. W. Lord, to the Zoological Society of London. In March 1833, one shot near Belfast was exhibited by Mr. W. Thompson, and two others are mentioned. This species, first distinguished by Mr. Temminck, is smaller than Gavia ridibunda, with shorter and more slender bill, and shorter tarsi.

Brown-headed Gull.

Larus capistratus, Temm. Man. d'Ornith. ii. 783.— Masked Gull. Yarrell, Brit. Birds, iii. 430.

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TO THE

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